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# THE IRON AGE

JANUARY 13, 1927

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## RYERSON BUYS CLEVELAND WAREHOUSE FROM BOURNE-FULLER

We are pleased to announce the purchase of the Cleveland warehouse of the Bourne-Fuller Company. This plant began operations as a Ryerson warehouse unit on January 3, 1927.

By the addition of excellent facilities at this point we are now able to offer Ryerson Steel-Service to entire area between the Atlantic seaboard and the Rocky mountains through a chain of steel-service plants at the following points:

Chicago Milwaukee St. Louis Cincinnati
Cleveland Detroit Buffalo
Boston New York

*See Page 7*

**JOSEPH T. RYERSON & SON INC.**
Established 1842

# A Factor of Safety—

MORE GAS NEEDED. But how much? And when? These perplexing questions confront the purchaser of a By-Product Coke Plant as specialized uses for Gas multiply.

The Koppers Becker type combination oven makes a precise determination unnecessary. It may be confidently called upon to deliver as much as 60% additional gas merely by substituting blast furnace gas or producer gas for oven gas as oven fuel.

This remarkable elasticity of surplus gas production, only possible in the Koppers Becker type combination oven, constitutes a 60% factor of safety in the determination of future gas requirements.

THE KOPPERS COMPANY
PITTSBURGH, PENNA.
CHICAGO, ILLINOIS. NEW YORK CITY

THE IRON AGE

New York, January 13, 1927

ESTABLISHED 1855 VOL. 119, No. 2

# Sheets Are Bundled for Shipment

## Handling of Steel in Specially Designed Carrier Saves Labor and Prevents Damage During Transportation

A NEW method of shipping and handling sheet steel recently adopted at the plant of the Hudson Motor Car Co., Detroit, has resulted in a great saving of labor, the elimination of damage to the sheets during transportation and a reduction of costs in manufacturing operations, due to the fact that the sheets reach the plant in good condition.

The sheets are packed on edge and bound together in a specially designed carrier, preferably in a unit of approximately 10 tons. Four of these units, or bundles, are placed in a freight car at the sheet mill. In packing, the sheets are set on a series of wood crossing members so that the friction of the lower edges of the sheets will hold the supporting pallet and pack together as a unit. The pack is bound by means of a pair of adjustable binders, which function as a yoke. The binders are adjustable to any size of pack, and by means of a screw pressure arrangement the sheets in the pack are firmly clamped together as a rigid unit.

### Sheets Are Packed On Edge

The bundle is not secured in any way to the floor of the car, but, with the supporting pallet, is allowed to slip back and forth between longitudinal guides to compensate for shocks during transit. This arrangement, it is pointed out, prevents damage to the floor of the car. An important advantage claimed for the system is that blemishes formed on sheets in transit when loaded flatwise, caused by cinders and other particles of foreign matter becoming lodged between the sheets, are avoided when the sheets are packed tightly together on edge.

A stock lifter and a 10-ton electric industrial truck with a lift platform are provided for unloading the bundles of sheets from the cars at destination. The stock lifter consists of an arch-shaped frame with four legs designed to straddle the bundle and a motor-operated hoist that is mounted in the top of the frame. Power for the hoist is supplied by plugging into the battery that drives the industrial truck. The stock lifter has a pair of swinging dogs or brackets on each side. These, when swung inwardly, form supports for the lifting device when it is without a load so that the platform truck can carry it in and out of the car. The lifter also has spring-braced casters capable of supporting the device without a load. When a bundle is

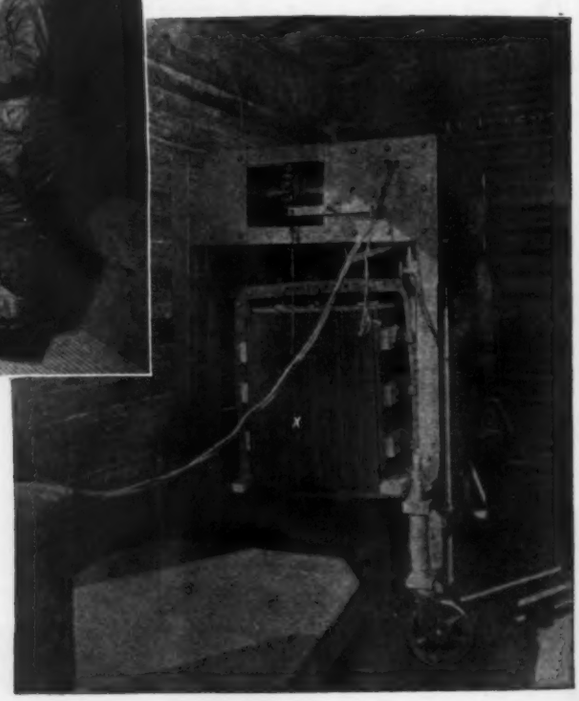
*For Shipment, Sheets Are Bound Together on Edge in a Specially Designed Carrier, Preferably in a Bundle of 10 Tons. This photograph, taken after the arrival of a car at destination, shows the good condition in which the sheets were received*

hoisted, however, the springs are compressed so that the weight is carried by the legs, which distribute the load over a considerable area of the car floor.

### Stock Lifter Hoists Bundle to Platform Truck

The cycle of operations in unloading a car is as follows: The platform truck carries the lifting device into the car and sets it in front of a bundle of sheets. The lifter, moving on its casters, is pushed by hand or truck astride the bundle. Four cable hooks from the lifter are attached to the binders holding the bundle, and the bundle is elevated sufficiently to allow the truck platform to be run beneath. The platform is then elevated by electrical power, picking up the load, whereupon the truck carries the bundle out of the car into the stock room. After the last bundle is removed, the truck is run back into the car and carries out the stock lifter. The handling equipment is designed for use in loading cars at sheet mills as well as for unloading at consuming plants.

*A Portable Electrically Operated Stock Lifter, Shown at the Right, Is Used to Hoist a Bundle So That a Platform Truck Can Be Run Beneath It. Power for the hoist is supplied by cable from the truck battery*



*A Lift Platform Truck, at the Left, Is Shown Carrying a 10-Ton Bundle of Sheets Out of a Freight Car*

The truck used is a standard type that is in general use in the Hudson plant for carrying practically every class of material. It has two pairs of wide rubber-tired tread wheels beneath the lift platform and a pair of driving wheels under the battery housing. These wheels are steered simultaneously so that the truck can be turned on a radius sufficiently short to permit its operation within a freight car. The wheels beneath the lift platform are mounted on a rocking underframe so that the load is always distributed to the two sets of wheels. It is stated that with the load distribution the truck will carry 10 tons of sheets without breaking or damaging the car floor, and that the bearing surface of the truck wheels on the floor is four times greater than that of wheels generally used on four-wheel iron trucks, so that the wear on the car floor and loading dock is largely eliminated.

### Test Shipments Show Results Under Old and New Methods

Test shipments of steel were made recently to the Hudson plant to demonstrate the new method of shipping and handling and also to show how steel arrives under normal shipping conditions. The shipments consisted of several cars of sheets from the Ashland, Ky., plant of the American Rolling Mill Co. Part of them were loaded in accordance with the American Railway Association loading regulations and the remainder according to the Hudson method of loading. An impact register was placed in one of the cars loaded the new way, and this showed that the car, in transit, received three distinct blows or shocks at a rate of impact of between 22 and 25 miles an hour. Adjoining cars loaded the old way received the same impacts. On arrival at the Hudson plant the sheets were inspected Dec. 14 by about 35 representatives from sheet mills and railroads, who also witnessed the unloading.

Inspection showed that all the bundles of sheets shipped the new way arrived in perfect condition, and that the car suffered no damage. On the other hand, the sheets shipped according to the A. R. A. regulations, as well as the car in which they were loaded, were damaged, it is asserted. The bracing used under the old method of loading was broken down and some of the sheets were scattered around the floor.

The unloading of a freight car containing 40 tons of sheets bundled in four units required an average of 5 min. per unit, with a total of three men, two of whom were the truck operators. As compared with this, it is stated, it takes efficient workmen approxi-

COMPARATIVE COSTS PER TON OF SHIPPING AND UNLOADING SHEETS

| | Old Method | New Method | Saving by New Method |
|---|---|---|---|
| Damage to sheets chargeable against the steel mill..... | $1.035 | $0.261 | $0.774 |
| Damage to sheets in transit, chargeable against the railroads ..... | 2.688 | 0.066 | 2.622 |
| Labor at the steel mill, including handling from the oiling machine to the cars and loading the cars..... | 0.19 | 0.08 | 0.11 |
| Labor at the automobile plant, unloading and placing under crane..... | 0.38 | 0.03 | 0.35 |
| *Cost of bracing used in loading cars (including return freight on bracing for the new method)..... | 0.325 | 0.31 | 0.015 |
| Maintenance and depreciation of plant equipment — at steel mill ..... | 0.05 | 0.04 | 0.01 |
| Maintenance and depreciation of plant equipment—at the automobile plant ..... | 0.04 | 0.03 | 0.01 |
| Freight car damage..... | 0.416 | none | 0.416 |
| Totals ..... | $5.124 | $0.817 | $4.307 |

*Bracing used in connection with the old method was used only once and then scrapped, whereas bracing used by the new method is returnable. Figuring the depreciation on this bracing, plus the return freight, shows that the cost of this item per ton of steel is $0.015 less by the new method than by the old.

mately 4 hr., or 12 times as long, to unload 40 tons of sheets when they are laid flat in a car in the usual way. The figures in the table represent the comparative costs per ton of shipping and unloading sheets by the old and new methods.

**New Method Means Saving in Manufacturing Costs**

A large saving in manufacturing costs, it is said, is effected by handling sheets according to the Hudson method. The fact that the sheets arrive in perfect condition eliminates the necessity of buffing and polishing to remove defects and permits the stampings made from the sheets to go to the painting or enameling departments without preliminary finishing. Other advantages claimed for the new method are the following: With the usual method shipping, highly finished sheets are oiled to prevent their surfaces from becoming scratched in handling and in transit. Under the new method, however, the sheets are held rigid, eliminating the necessity of using mineral oil and its consequent burning off. For rust prevention purposes a preparation is used that is soluble in water and may be removed at small expense. The usual method of unloading two or three sheets at a time necessitates much hard manual labor. In fact, it is considered one of the worst jobs in an automobile plant and results in a high labor turnover.

The new method of shipping and handling sheets was devised by R. T. Romine of the Hudson Motor Car Co. The 10-ton platform trucks used in taking the bundles from the cars were built by the Elwell-Parker Electric Co., Cleveland.

## HEAT TREATING RAILS

### Boston Steel Treaters Hear Discussions on High-Speed Steel and French Rail Treatment

James P. Gill, metallurgist Vanadium Alloy Steel Co., Latrobe, Pa., was the guest of the Boston chapter of the American Society for Steel Treating on Friday evening, Jan. 7, at the Massachusetts Institute of Technology, Cambridge, Mass.

His treatment of the subject "High-Speed Steel" was divided into three parts: First, composition; second, structure as affected by manufacture; and third, structure as affected by heat treatment. After treating each subject the meeting was thrown open to discussion. One point brought out by Mr. Gill was that a surprising number of things can happen to the interior structure of any one kind of steel in its heat treating, in its manufacture, or both. His subject concerned only 18 per cent tungsten steel. Exhibits included approximately 120 specimens of fractures with accompanying micrographs and, as Mr. Gill intimated, these did not by any means conclude his experiments and investigations. His address was prefaced by a moving picture, showing the manufacture of high-speed and other tool steels at the Vanadium Alloy Steel Co.'s mills.

*Heat Treating Steel Rails*

Previous to the introduction of Mr. Gill, Dr. George B. Waterhouse, professor of metallurgy Massachusetts Institute of Technology, reviewed some of the world's latst metallurgical literature, giving abstracts. The heat treatment of rails, as discussed in an article by a French metallurgist, was abstracted at some length. Realizing that some day steel mills will have to heat treat rails extensively, the Frenchman, working along certain lines, evolved a working theory whereby the rails are taken from a mill and run through a machine resembling in construction a press.

Under the head of the machine is a movable quenching tank 40 ft. long. The rail, held firmly in the machine, is quenched by the raising of the tank, the speed of the tank lift being regulated as desired. In the first treatment of 150 tons, the Brinell hardness was raised from 207 to 219 on the wearing surface of the rails. On 4000 tons of street car rails the Brinell hardness of the wearing surface was raised to 320, while that of the body of the rails was 216.

Doctor Waterhouse referred to the Bethlehem Steel Co.'s rail quenching (Sandberg) process, which he described as an air spray treatment. Robert E. Belknap, New England manager of the Bethlehem Steel Co., stated that some 5000 tons of rails so treated had recently been shipped west, and that the Boston Elevated Railway Co. and the Lehigh Valley Railroad were users of these rails.

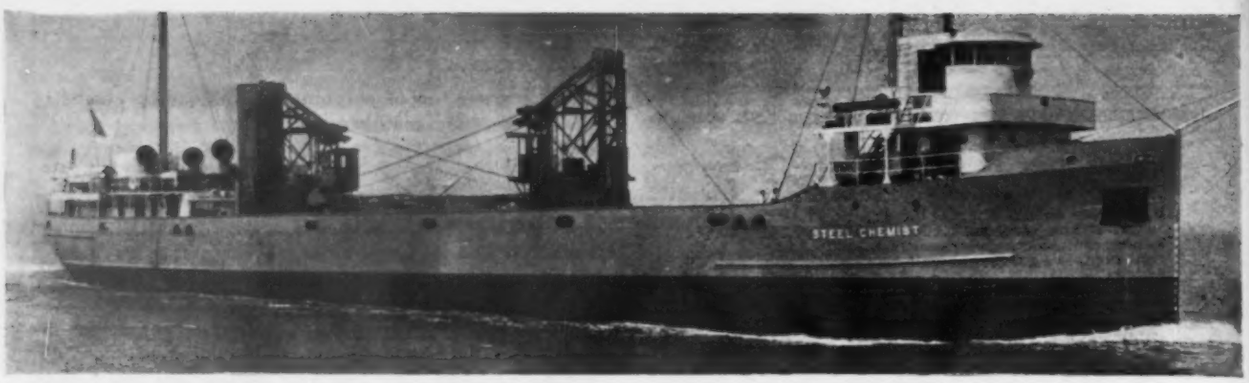
## War Cut Into Pig Iron Requirements

Speaking before the Middlesbrough (England) Chamber of Commerce recently, Sir William Larke, director of the National Federation of Iron and Steel Manufacturers, reviewed the position of the iron and steel industry. He declared it to be suffering not from too great productive capacity, as is often supposed, but from a world-wide under-consumption.

Had the pre-war rate of increase been maintained, he said, the world in 1925 should have consumed 137,000,000 tons of pig iron. Actually, only 76,000,000 tons was called for. The world's productive capacity, including the enormous expansion in the United States, he placed at 107,000,000 tons, and considered this as a generous estimate. But for the war, on his theory, the world's present productive capacity would have been inadequate last year to provide what would have been world consumption.

## Machine Tools and Steel Subjects of Articles in Financial Journal

E. Payson Blanchard of the Bullard Machine Tool Co., Bridgeport, Conn., contributes to the December number of the *Financial Digest*, New York, an article on "Building Master Tools for Modern Industry," in which the importance to industry of machine tool design and manufacturing is set forth for those not generally acquainted with metal-working processes. In the same issue is an interview with Eugene G. Grace, president Bethlehem Steel Corporation, written by Augustin McNally. In this interview Mr. Grace discusses the effects which hand-to-mouth buying has had on industry.




# Waterways Handle More Steel

## *Self-Loading Boats and New Docks Are Features of Expanding Great Lakes Traffic—Seaboard Plants Also Make Heavier Water Shipments*

GREAT Lakes vessels, in 1926, handled a large tonnage of rolled steel, pig iron and scrap. While, in the aggregate, these shipments were small in comparison with the heavy volume of ore traffic, they showed a conspicuous gain over previous years, totaling 400,000 to 450,000 tons according to the best available estimates. With the provision of docks and boats adapted to handling iron and steel, more rapid expansion of this class of traffic seems assured. Paralleling the increase in iron and steel shipments on the Great Lakes there has been a heavier movement of the same products on Eastern rivers and canals flowing into the sea, together with a growing coastwise traffic.

The development of iron and steel transportation on the Ohio, Mississippi and Warrior rivers was discussed in detail in an illustrated article published in THE IRON AGE of Jan. 6, page 14. The same factors that have stimulated river transportation are providing the impetus for greater use of the Great Lakes for shipments of iron and steel. There is no doubt that the elimination of Pittsburgh Plus focused the attention of Ohio, western Pennsylvania, West Virginia and western New York mills on the water routes as a possible means of meeting the competition of Chicago district mills in the Northwest. These Central Western mills, with their long freight hauls, cannot sell much steel in the Northwest on the basis of the high all-rail rates. Moreover, all of the independent mills cannot construct new plants in Chicago territory to compete for the Northwestern trade.

Those promoting the transportation of steel on the Great Lakes point out that the dock handling charges must be low and that they can be made low by adequate port facilities for handling steel. They call attention to the very low cost of transporting ore, coal and grain, which is due in part to the excellent handling facilities at both ends of the Lakes. In 1926 two docks in Cleveland and one in Detroit were rebuilt and equipped with locomotive cranes and lifting magnets for handling steel. The Cleveland Terminal & Dock Co., and the Cleveland Stevedore Co. are the two Cleveland companies that provided docks, and at Detroit a dock and a warehouse were constructed by the Detroit Railway & Harbors Terminals Co. The dock of the Cleveland Terminal & Dock Co. was not ready for use until late in the season, and only one cargo of steel was handled. This was shipped by a Cleveland steel company to two Detroit consumers in the automotive field. The steel was hauled on cars from the steel plant to the dock and unloaded on cars at the new dock of the Detroit terminal company.

*Great Lakes vessels are being equipped with unloading equipment because of the lack of adequate dock equipment at many points. A boat of this type, the Steel Chemist, is shown in the illustration at the top of the page. This ship, which is the latest to be completed by the United States Steel Products Co., is 250 ft. long and has a capacity of 2000 tons.

Some effort is being made to interest the railroads in dock facilities, but they do not seem to be very keen about water shipments, which would cut off some of their long hauls. One of the arguments being made to the railroads in favor of rail-and-Lake transportation is that if they would haul steel from the Youngstown district to ports for shipment up the Lakes, they would not have to move so many empty cars to Lake Erie for ore. The railroads, it is said, are feeling the effects of the change in the coal mining situation of the past two or three years, which has resulted in a heavy movement of non-union West Virginia coal to the Lakes for shipment to the Northwest and a corresponding loss in coal traffic from Pennsylvania and eastern Ohio mines.

### Comparative Costs of All-Rail and Rail-and-Lake Shipments

Lake freight rates are not entirely uniform, being subject to negotiation between shippers and boat companies, but for the haul from Cleveland to Detroit 90c. per net ton is a representative charge. On that basis the total transportation charges from Cleveland steel plant via lake to consumer's plant at Detroit are $2.74 per net ton, as against an all-rail rate of $4.40. The difference of $1.60 per net ton in favor of the water route compares with a saving of $1.26 on shipments by rail and water from the Valley district. The water shipment charges, including delivery to consumer's plant at Detroit, are made up as follows:

From Cleveland

| | Per Net Ton | |
|---|---|---|
| Switching charge from steel plant to dock | $0.60 | |
| Handling to ship | 0.60 | |
| Vessel transportation charge | 0.90 | |
| Handling from vessel to car at Detroit | 0.40 | |
| Switching charge to consumer's plant | 0.24 | |
| *Total charges by water route* | | $2.74 |
| *All-rail rate, Cleveland to Detroit* | | 4.40 |

From Youngstown

| | Per Net Ton | |
|---|---|---|
| Valley mill to Cleveland dock | $1.90 | |
| Handling to ship | 0.60 | |
| Vessel transportation | 0.90 | |
| Handling from ship to car at Detroit | 0.40 | |
| Switching to consumer's plant | 0.24 | |
| *Total charges by rail-and-water route* | | $4.04 |
| *All-rail rate, Valley to Detroit* | | 5.30 |

The water transportation rate given above is based on a minimum cargo of 2000 tons, with two days for loading, two days for unloading and 24 hr. for sailing between two ports.

The most difficult problem that must be solved before the Lakes are generally used for the transportation of steel is getting together enough orders for a cargo. Even the largest automobile plants in Detroit

seldom want to take 2000 tons of steel at a time. Possibly if they are given a share of the saving in freight they will be more inclined to take in round lot shipments, but the motor car builders, like other steel consumers, have largely abandoned the practice of carrying large stocks of material. The primary incentive for water shipments, of course, has been to overcome a disadvantage in railroad freight rates so that material may be sold on a competitive basis with that offered by producers with shorter rail hauls. In some instances, notably at Detroit, water transportation has meant lower delivered prices at buyers' plants than on steel shipped by rail. This is not surprising because it is evident that some inducements must be offered to persuade buyers to take material in boat quantities and at slower deliveries than are available by rail.

One Cleveland steel company has apparently overcome the difficulty of obtaining sufficient tonnage for cargoes by shipping to Detroit in barges carrying 600 to 1200 tons each. While it can accumulate a bargeload of business within a few days, the capacity of its plant and the size of individual orders make it impractical to ship larger lots at one time. The steel is loaded on the barges by the company's ore-handling bridge crane. It is planned to provide other handling equipment before next spring that will be better adapted to loading steel on boats. It is probable that a locomotive crane with a lifting magnet will be installed. At Detroit the barges moor at the dock of the Detroit Railway & Harbor Terminals Co., where the steel is unloaded directly to flat cars and is then delivered to the customer at the Detroit switching charge. The Cleveland mill made some water shipments of steel to Detroit in the previous year or two but not nearly so much as during the past Lake shipping season. It expects to make still heavier shipments by barge in 1927. Its water shipments in round lots have been entirely to Detroit, since that port is the big consuming center for its products and it has not had quantities of any size to ship to other points on the Lake.

### Shipments of Pig Iron and Semi-Finished Steel

Another Cleveland producer, in the past season, shipped two cargoes of pig iron to Chicago and several cargoes of semi-finished steel to Chicago and Buffalo. Several New York State barge canal barges that brought sulphur to this Cleveland plant were loaded with semi-finished steel, which went to a New England consumer.

There was also a considerable movement of semi-finished steel to Detroit during the last season of navigation. This was shipped not only from Cleveland but also from South Chicago and Buffalo. In November a Cleveland steel company received a cargo of 3300 tons of pig iron from Buffalo. This is believed to have been the first water shipment of pig iron to Cleveland from that producing center. A large tonnage of pig iron was shipped by water in 1926 from Buffalo to Detroit. One boat that carried a cargo of pig iron to Detroit took 400 tons of Detroit pig iron back to Buffalo, evidently of an analysis that was not available at Buffalo at the time.

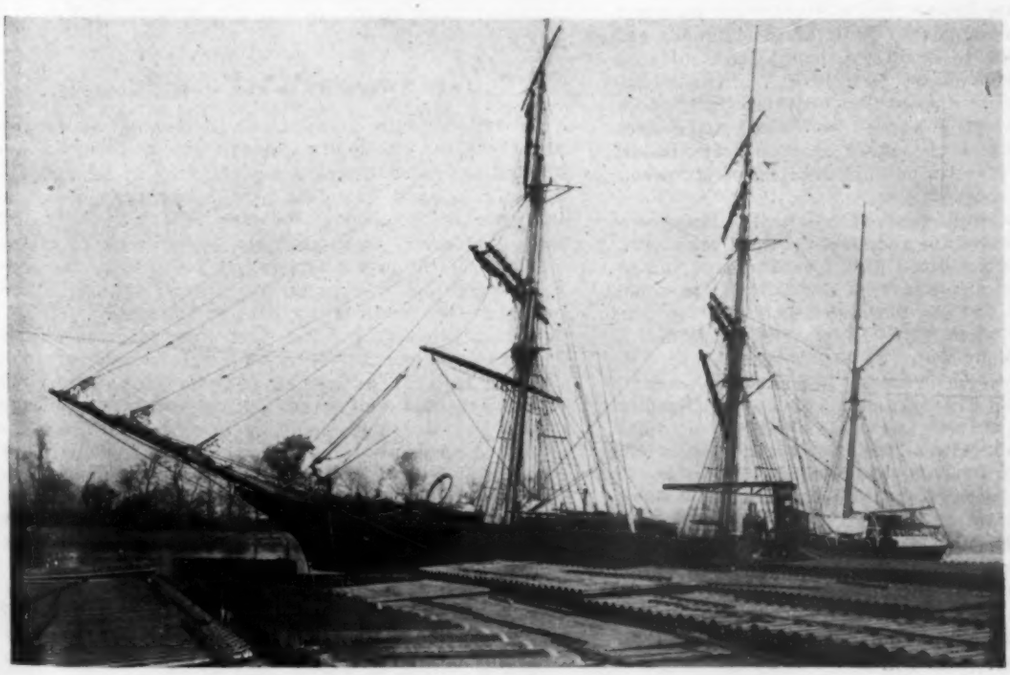
Considerable pig iron, as well as some steel, was shipped east from Buffalo by water, partly down the New York State barge canal and partly down the St. Lawrence River.

Nineteen-twenty-six was the first year that a producer used the Lakes for the transportation of round lots of pig iron and steel from one of its plants to another for the completion of manufacturing processes. To this end from 35,000 to 40,000 tons of pig iron was shipped from South Chicago to Duluth and a similar tonnage of billets was moved from Duluth to Cleveland and Conneaut, Ohio, for rail delivery to a tube plant at Ellwood City, Pa.

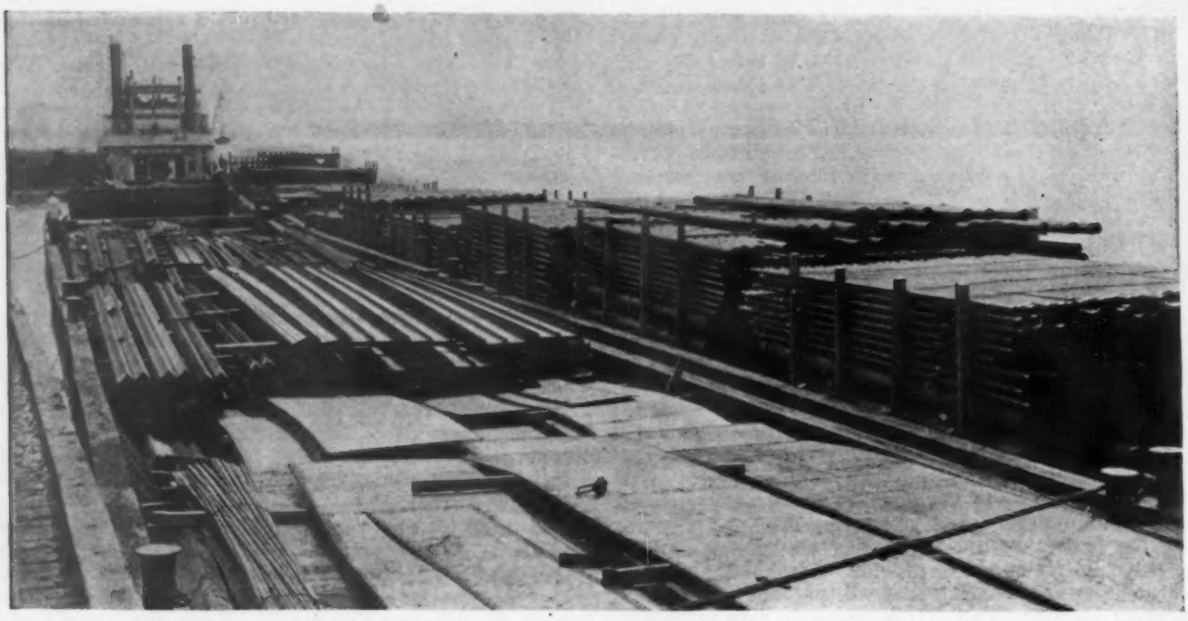
During the past season there were about 20 cargoes of Canadian shipments of steel—approximately 40,000 tons—to Port Williams and Port Arthur, Ont. Of these cargoes about 16 were shipments of rails from the Algoma Steel Corporation plant at Sault Ste. Marie, Ont., and the remainder consisted of nails, wire, pig iron and pipe from Nova Scotia, with possible inclusions of imported material.

### Steel Corporation Line Handles 130,000 Tons

The United States Steel Corporation, in 1923, put into commission two boats built especially for carrying steel to Canadian ports. These, as well as two vessels completed in 1926, are operated by the corporation's subsidiary, the United States Steel Products Co. Of the two new boats, the Steel Electrician was placed in operation last spring and the Steel Chemist went into commission in September. In addition to using these vessels, the corporation has chartered some outside tonnage. Among cargoes handled in other boats were its shipments of semi-finished steel and pig iron. The vessels of the United States Steel Products Co. line are 250 ft. long, or Welland Canal size, and have a capacity of about 2000 tons. Steel handled by these boats is shipped from Chicago and Lorain, and the line's Canadian receiving ports are Midland, Ojibway, Welland and Hamilton, Ont., and Montreal, Que. The cargoes include virtually all forms of finished steel, although structural material and plates predominate. A fair tonnage of skelp is also handled. Shipments by the United States Steel Products Co. line in 1926 to-



*The Picturesque Vessel Is an Ocean-Going Bark Loading with Cast Iron Pipe at Burlington, N. J., for Shipment to New England*



*The Increasing Use of the Ohio, Mississippi and Warrior Rivers for the Transportation of Steel Was Covered in Detail in* THE IRON AGE *of Jan. 6. The river tow of barges shown in the illustration is loaded with bars and plates (shown in the foreground), structural shapes and pipe*

taled about 130,000 tons, a gain of 20 per cent over the tonnage handled in 1925.

The prospects for still further gains in Lake steel shipments hold out an opportunity for some of the older ore vessels. In view of present Lake rates on ore and coal and the ability of the large boats to handle about all the traffic, the smaller vessels—those from 300 to 450 ft. long and of 5000 to 6000 tons capacity—are having difficulty in operating. There are at least 100 ships of this type, and without great expense, they can be fitted for handling steel in long lengths by enlarging the hatches.

A Lake vessel that was reequipped for handling steel is the 4500-ton steamship Lagonda, which was described in an article entitled "Large Shipment of Steel by Lakes," published in THE IRON AGE of Sept. 9, 1926. This boat, which is operated by the Interlake Steamship Co., a subsidiary of Pickands, Mather & Co., Cleveland, carried steel all last season from a Buffalo steel plant. It made 11 trips and carried approximately 50,000 tons of steel, made up mainly of plates, shapes and bars, although some rails were included. However, the rails shipped from Buffalo to the Northwest were carried largely on other boats. Most of the Lagonda cargoes went through to Duluth, although parts of some cargoes were unloaded at Detroit and at Sault Ste. Marie. On its return trips the boat brought a total of close to 40,000 tons of scrap from Duluth and Detroit to Buffalo. Much of the scrap shipped from Duluth was assembled in the ore mining districts of Minnesota and northern Michigan.

Several of the independent steamship lines have handled considerable iron and steel on the Great Lakes during the past year, some of their shipments including steel bars and pig iron from Buffalo to Detroit and steel bars from Buffalo to Cleveland. One of the Cleveland vessel men, Frank J. Peterson, handled a good deal of steel by water on the Lakes in 1926. He fitted up one boat, the Frank J. Peterson, particularly for that service. This vessel is of the self-loading type, being equipped with rigs that handle steel to and from two parallel railroad tracks at the side of the dock. The boat is of Welland Canal size, being one of the vessels built on the Lakes for the Government during the war; it is of 3300 tons capacity, and the rigs usually handle the steel in 3-ton bundles. An advantage in equipping a boat with its own handling equipment is that it can load and unload at any dock regardless of whether the dock has cranes or other handling facilities. The Peterson is handling structural sections up to 60 ft. in length, but will be arranged to take sections 70 ft. long. It takes two days to load this vessel with steel and one and one-half to two days to unload it.

What can be done in routing a steel-handling boat on the Great Lakes is shown by a typical schedule of the Peterson. Starting at Chicago, it loads with bars for Detroit, runs light from Detroit to Lorain, where it takes on a cargo of skelp for Welland, goes from Welland to Buffalo for a cargo of steel or pig iron for Cleveland, and loads at Cleveland with semi-finished steel or other material for Chicago, making the round trip in 16 days and carrying in that time four cargoes, two in each direction. While this schedule still lacks regularity, it has been carried out several times.

An idea of the amount of steel shipped by water to Detroit can be gained from the dock records of the Detroit Railway & Harbor Terminals Co., which is said to have handled most of the incoming steel and outgoing scrap in that city in 1926. During the past Lake season this company handled 38,971 net tons of steel, 8412 net tons of iron pipe and 45,797 gross tons of scrap. The pipe, as well as the steel, was incoming material, while the scrap was shipped out, probably all going to Buffalo.

### Lake Shipments to and from Chicago

Paralleling the terminal developments at Detroit and Cleveland, the South Chicago Coal & Dock Co. has erected and is equipping a modern dock at Ninety-fifth Street, Chicago. The dock now has bridge cranes and last summer handled 15,000 tons of pig iron, 135,000 tons of ore and approximately 50,000 tons of billets and slabs. No provision has yet been made for handling scrap, but it is planned to install suitable equipment for that material by next summer.

The cargoes of pig iron that were received at this dock came from Cleveland and were consigned to a Chicago broker. The billets and slabs were also shipped from Cleveland and were delivered to two Chicago mills. Outward movements by Lake from Chicago included a considerable quantity of alloy steel bars for delivery at Detroit. Another Chicago company's Lake shipments were limited to rails for delivery at Superior, Wis., and Duluth. A third producer shipped about 40,000 tons of pig iron to Duluth by water, while its steel shipments went mainly to Canadian ports.

Although there are no established Lake freight rates on pig iron and steel, they range from $1 to $1.25 per gross ton. Switching charges in the Chicago switching district are from 50c. to $1 per net ton. The

regular switching rates of 50c. for a one-road haul and 56c. for a two-line haul strictly apply only between local producers and consumers, but the roads do not always insist on the full local freight rate of $1 that they are authorized to charge on shipments to and from docks. The dock handling charge at Chicago is 50c. per net ton.

Pig iron shipped to Chicago from Cleveland was loaded into vessels at the furnaces so that there was no switching or loading charge at that point. Assuming that the water rate to Chicago ranged from $1 to $1.25 per gross ton, plus 2c. per gross ton for insurance, and that the dock unloading charge was 50c. per net ton, the total charge from Cleveland furnace to cars at Chicago was $1.41 to $1.64 per net ton. If the full local rail rate of $1 be added for delivery in the Chicago switching district, the total charge from furnace to consumer becomes $2.41 to $2.64 per net ton, as compared with an all-rail rate of $4.41. Similar savings were made on shipments of other commodities.

## *The Government's Comprehensive Waterway Program*

The growing use of the Lakes and rivers has given a new impetus to waterway improvements. Intermittent, disconnected work on our rivers has given place to a consistent, comprehensive program based on a conception of our inland waterways as a transportation system rather than as a collection of unrelated units. In line with this change in attitude the administration at Washington has committed itself to a definite plan that provides for the completion of all adopted waterway projects in the Mississippi Valley within the next five years.

The outstanding development in the Mississippi system has been the canalization of the Ohio River. Between Pittsburgh and Evansville, Ind., 42 locks and dams have been completed, and work on the remaining eight to Cairo, Ill., is expected to be completed within two years. This will permit all year 'round navigation from Pittsburgh to the lower Mississippi Valley.

The improvement of the link to connect Lake Michigan with the Mississippi system is also making progress. A bill recently passed by the United States Senate authorizes the construction of a 9-ft. channel 200 ft. wide from the mouth of the Illinois River to Utica, Ill. Between the latter point and Lockport, Ill., a distance of 61 miles, the construction of five locks has been undertaken to insure a 9-ft. stage of water. One of these locks has been completed, another is under construction, and bids have been advertised for a third. Between Lockport and Chicago, 36 miles, the Sanitary District canal, fully completed, has an average depth of 21 to 24 in. If the controversy regarding the amount of water diverted into the sanitary canal results unfavorably to Chicago, more locks and dams will have to be built between Lockport and Utica and the total cost of opening the waterway to navigation will be increased three-fold. On behalf of Chicago it is contended that the diversion from Lake Michigan has lowered the level of the lake only 5 in. and that the major part of the reduction in water level has been due to a decline in rainfall. Suggesting that this diversion is an engineering rather than a legal question, Herbert Hoover, Secretary of Commerce, made the following remarks in a recent address:

"Our engineers inform me that remedial works can be placed at various outlets of the Lakes, the total effect of which will be to restore the whole of the losses in levels created through the artificial diversions at Chicago and into Canada. I am informed that these works need cost less than $5,000,000."

Another Great Lakes-Mississippi system link that has been receiving more attention of late is the proposed Lake Erie-Ohio River canal. At a hearing held on this project on Oct. 15, 1926, before the Board of Engineers for Rivers and Harbors, War Department, representatives of most of the leading steel producers in the Pittsburgh and Youngstown districts appeared on behalf of the canal.

The development of water transportation has been most rapid of late in the inland sections of the country where the combination of high freight rates and increasingly sharp competition has restricted the markets of producers. On the Eastern seaboard, the leading ports continue to handle most of our steel exports, and

*Eastern Plants Located Near Tide Water Are Making More Extensive Use of the Sea Both for Inbound and Outbound Shipments. Located between the Pennsylvania Railroad tracks and the Delaware River, the Burlington, N. J., works of the United States Cast Iron Pipe & Foundry Co. is excellently situated both for rail and water transportation. The tonnage of pig iron received yearly at this plant approximates 100,000 tons, which, of course, is about equivalent to the quantity of pipe shipped*

to that tonnage in recent years has been added a large proportion of the steel shipped to the Pacific Coast. The steel plant at Sparrows Point, Md., has been showing unusually rapid growth, and this is undoubtedly accounted for in large measure by the low ocean rates for the transportation both of raw materials and finished products.

Water transportation of pig iron in the East has been a larger factor during the past year because of the low delivered prices quoted on foreign iron. Heavy shipments of pig iron have been made via the New York State barge canal from Buffalo to New York harbor points and Connecticut ports. Eastern New York State furnaces also have shipped considerable iron down the Hudson River. A New England furnace has barged iron both to New York harbor and to the Philadelphia district. These shipments, incidentally, gave a return haul to barges that had carried coal to Boston.

Foreign competition in cast iron pipe also has been severe on the Eastern seaboard, and this probably accounts for an increasing use of the water by domestic pipe plants both for shipping out finished products and shipping in raw materials.

## MORE IRON ORE LAST YEAR

### Output in 1926 Exceeds 1925 by 5 Per Cent—Imports and Exports Higher

The iron ore mined in the United States in 1926, exclusive of ore that contained 5 per cent or more of manganese in the natural state, is estimated by the United States Bureau of Mines at 67,693,000 gross tons, an increase of 9 per cent as compared with that mined in 1925. The ore shipped from the mines in 1926 is estimated at 69,141,000 gross tons, valued at $175,307,000, an increase of 8 per cent in quantity and of 9 per cent in total value as compared with the figures for 1925. The average value of the ore per gross ton at the mines in 1926 is estimated at $2.54; in 1925 it was $2.52. The stocks of iron ore at the mines, mainly in Michigan and Minnesota, apparently decreased from 10,795,630 tons in 1925 to 9,496,000 tons in 1926, or 12 per cent. These estimates are based on preliminary figures furnished by producers who in 1925 mined about 99 per cent of the total iron ore.

#### Lake Superior District

About 85 per cent of the iron ore shipped in 1926 came from the Lake Superior district, in which approximately 57,314,000 tons was mined and 58,759,000 tons was shipped, increases of 10 and 8 per cent, respectively, as compared with the quantities mined and shipped in 1925. The ore shipped in 1926 was valued at $151,484,000, an increase of 9 per cent. These totals include the ore from mines in southern Wisconsin and ore shipped by rail as well as by water from all mines, but exclude manganiferous ores that contained 5 per cent or more of manganese in the natural state. The ore is chiefly hematite. The stocks of iron ore in this district apparently decreased from 9,468,624 tons in 1925 to 8,104,000 tons in 1926, or 14 per cent. The stocks at the end of 1926 were about 2,260,000 tons less than the average for the preceding five years.

#### Other States

The mines in Minnesota furnished 69 per cent of the total iron ore shipped from the Lake Superior district in 1926 and 59 per cent of the total of the United States. The mines in Michigan furnished 28 per cent of the Lake shipments and 24 per cent of the grand total.

The Southeastern States, which constitute the second largest iron-ore producing area, including the Birmingham and Chattanooga districts, mined approximately 7,253,000 tons of iron ore in 1926, a decrease of 3 per cent as compared with 1925. The shipments of iron ore from these States to blast furnaces in 1926 amounted to 7,249,000 tons, valued at $15,720,000, a decrease of 0.3 per cent in quantity, but an increase of 4 per cent in value as compared with the quantity and value of the shipments in the previous year. The ore consists mainly of hematite; brown ore and magnetite come next in order. The Northeastern States, which include the Adirondack district, New York, and the Cornwall district, Pennsylvania, in 1926 mined 1,954,000 tons of iron ore and shipped 1,959,000 tons, valued at $6,398,000, increases of 50 per cent in the quantity mined, 31 per cent in the quantity shipped, and 33 per cent in value of shipments as compared with 1925. The Western States that ordinarily produce iron ore, named in order of their importance, are Wyoming, Utah, New Mexico, Colorado, Montana, and California. It is estimated that the Western States mined in 1926 approximately 1,172,000 tons of iron ore, and shipped 1,174,000 tons, valued at $1,705,000, increases of 24 per cent in the quantities mined and shipped, and 7 per cent in value of shipments as compared with 1925. The ore comprises hematite, magnetite and brown ore. The increase in output in this group of States in 1926 reflects the more active operations at mines in the Hartville district, Wyoming, in the Fierro district, New Mexico, and near Orient, Colorado.

#### Imports and Exports

The imports of iron ore reported for the 11 months ended Nov. 30, 1926, amounted to 2,350,406 tons, valued at $5,401,499. The imports for the year 1925 were 2,190,697 tons, valued at $6,895,229. The reported exports of iron ore for the 11 months ended Nov. 30, 1926, amounted to 868,405 tons, valued at $3,379,331, as compared with exports for the entire year 1925 of 630,521 tons, valued at $2,411,093.

The following table shows the quantity and value of the iron ore mined and shipped in the United States by the principal producing States. The figures for 1925 are final, but those for 1926 are subject to revision.

| | Ore Mined (Gross Tons) | |
|---|---|---|
| District | 1925 | 1926 |
| Lake Superior: | | |
| Michigan | 14,490,529 | 15,357,000 |
| Minnesota | 36,856,244 | 40,662,000 |
| Wisconsin | 817,149 | 1,295,000 |
| | 52,163,922 | 57,314,000 |
| Southeastern States: | | |
| Alabama | 7,093,250 | 6,858,000 |
| Georgia | 78,835 | 71,000 |
| Missouri | 40,043 | 120,000 |
| North Carolina | 22,011 | 15,000 |
| Tennessee | 164,717 | 139,000 |
| Virginia | 96,272 | 50,000 |
| | 7,495,128 | 7,253,000 |
| Northeastern States: | | |
| New Jersey | 202,942 | 208,000 |
| New York | 141,534 | 645,000 |
| Ohio | 2,410 | 1,101,000 |
| Pennsylvania | 955,955 | |
| | 1,302,841 | 1,954,000 |
| Western States | 946,106 | 1,172,000 |
| Grand total | 61,907,997 | 67,693,000 |

## Manufacture of Packing, Insulating, Covering and Gaskets

Census Bureau figures for 1925 have been issued, covering steam and other packing, pipe and boiler covering and gaskets. The value of such materials produced in 171 establishments is given as $36,990,234. This represents an increase of 45.6 per cent over the $25,407,570 of such products made by 142 establishments in 1923.

Wages to the extent of $8,069,155 were paid to an average of 6084 wage earners in 1925, against $6,431,746 paid to 5064 wage earners in 1923. The increase in payrolls was 25.5 per cent, against 20.1 per cent in wage earners. This indicates that the average pay envelope was about 4 per cent better filled in 1925 than in 1923.

# Steel-Mill Electrification in 1926

## Large Units Prominent—Individual Drive on Separate Stands of Continuous Mills—Improvements in Adjustable-Speed Drives

BOTH the General Electric Co. and the Westinghouse Electric & Mfg. Co. report considerable additions to main-roll electric drives during the year just ended. Both report advances along other lines, including the extension of individual drives to individual units in mills consisting of a large number of stands. Improvements of various descriptions in control and in efficiency are among the achievements of the year. In the following paragraphs the particular features of each company's work during the year, in so far as steel mill units are concerned, are set forth.

### Steel Mill Main-Roll Drives

Unprecedented activity during 1925 in the application of electric motors to steel mill main-roll drives continued unabated during 1926. Over 140,000 hp. of General Electric motors were provided for the industry, bringing the total installed capacity of such motors to more than 960,000 hp.

Several reversing mill equipments were placed in operation. One, a 3000-hp. 80 to 150-r.p.m. motor, which replaced an engine drive on a 24-in bar mill at the Indiana Harbor plant of the Inland Steel Co., was of especial interest because of the remarkably short time taken for its installation. In 122 hr. from the time the mill was shut down the engine and its foundations had been removed, new foundations for the motor built, and the motor installed and connected to the mill, ready for operation. This achievement is said to lower the previous record for a change-over from steam to electric drive by about 13½ days.

### Three Types of Motors

There will be installed at the Sparrows Point plant of the Bethlehem Steel Co. a 21-in. continuous sheet-bar and skelp mill which will have three different types of driving motors. The first eight stands will be driven by synchronous motors, No. 1 being of 4000 hp., 83 r.p.m., and No. 2 of 6500 hp., 187 r.p.m. The next three stands will be driven by an adjustable speed induction motor with Scherbius speed regulating equipment, the motor being rated 6700 and 5000 and 3320 hp., at 500 or 375 or 250 r.p.m. This is the largest Scherbius controlled induction motor in this country. The finishing stand is driven by a 2600-hp., 320 to 275-r.p.m. direct-current motor.

Another equipment at this same plant is the drive for a 46-in. reversing slabbing mill; the motor being a double-unit machine rated 7000 hp., 50 to 100 r.p.m.

### Individual Drives for Each Stand

Installations of continuous mills in which practically every stand is driven by an individual motor are becoming more numerous. At the South Chicago plant of the Illinois Steel Co. a 13-stand mill will be driven by 13 adjustable-speed d.-c. motors totaling 10,500 hp. At the Gary works of the same company a 13-stand mill will be driven by nine d.-c. motors totaling 6500 hp., and a 15-stand mill will have 11 motors totaling 5350 hp.

Another example of this trend toward individual drive is at the plant of the Weirton Steel Co., where a new mill to be installed will be driven by three a.-c. and five d.-c. motors having a total continuous capacity of 16,000 hp. Power for the five d.-c. motors will be obtained from two synchronous motor generators, each consisting of one 4200-kva. 6600-volt synchronous motor and two 1500 kw. 600-volt d.-c. generators. The five d.-c. motors are started simultaneously by Ward Leonard control, utilizing the voltage of the four d.-c. generators.

### Four-High Plate Mill Drive

The Lukens Steel Co., Coatesville, Pa., installed an 84-in. tandem plate mill in 1926, in which both roughing and finishing stands are driven by d.-c. reversing motors. Each mill is four-high with backing-up rolls carried in roller bearings. The roughing mill motor is rated 1200 hp., 25 to 50 r.p.m., 330 volts. The finishing mill motor is a duplicate machine, but rated 2500 hp., 53 to 80 r.p.m., 600 volts. The flywheel motor generator consists of a 3000-hp. 600-r.p.m. induction motor, a 25-ton flywheel, and three duplicate 1050-kw. 330-volt generators, one for the roughing mill motor and two in series for the finishing mill motor.

Existing capacity of turbine generators in steel-mill power stations was increased by over 100,000 kw. in 1926. Among the larger units were two 20,000-kw. machines for the Fairfield works of the Tennessee Coal, Iron & Railroad Co. and a 20,000-kw. unit for the Sparrows Point plant of the Bethlehem Steel Co. These are the largest turbine generators yet installed for steel-mill power stations.

The first isolated-phase switching equipment in an industrial plant was installed in the new generating station of the Franklin works of the Bethlehem Steel Co. at Johnstown, Pa. The initial installation was followed by others at the plants of the Illinois Steel Co., Gary, Ind., and Jones & Laughlin Steel Corporation, Woodlawn, Pa.

### Great Concentration of Power

As rolling mills require huge power, one of the largest structural plants has been rebuilt with motor drives of record-breaking size. The first mill was equipped a year ago with one Westinghouse 7000-hp. reversing motor, one 5000-hp. reversing motor and one 6000-hp. induction motor. These machines having run a year successfully, another mill is being equipped with one 8000-hp. reversing motor, two 7000-hp. reversing motors and two 2000-hp. reversing motors.

The enormous power required in such work is indicated by the fact that the momentary peak capacity of the two sets of motors is nearly 120,000 hp. These two sets also have the largest total continuous capacity. The 8000-hp. machine is the largest single-armature motor ever built, both as to continuous hp. and maximum torque, and drives the largest blooming mill in the world. The 2000-hp. motors operate the first independently driven edging rolls on a structural mill.

A new monthly tonnage record for electrically driven blooming mills was established by the rolling of 91,062 gross tons of ingots in March on a 40-in. blooming mill driven by a Westinghouse reversing motor equipment.

### Nine Motors for Strip Mill

During the year there was placed in operation a 20-in. x 16-in. tandem hot strip mill drive comprising nine motors of 12,200 hp. total capacity, together with transformer substation, motor generator sets, and switching equipment, and also all auxiliary motors and control equipment. As compared with preceding mills, having four, this mill has six tandem finishing stands, each driven by individual d.-c. motors of 1500-hp. and

1800-hp. capacity, designed to have inherent speed regulation of not more than 2 per cent from no-load to full-load. This close speed regulation is necessary to avoid excessive looping or pulling steel in two between stands when rolling thin sections at high speed.

A 5000-hp., 99-r.p.m., 3-phase, 60-cycle, 13,200-volt, wound-rotor induction motor has been built for a continuous billet mill drive. The motor is of particular interest in that it is the first mill drive built by Westinghouse for operation on higher than 6600 volts. Also, due to the slow speed, the motor is of exceptionally large diameter.

### Improved Control Featured

A valuable improvement in alternating current adjustable speed drives has been made by the building and placing in successful operation of one 770-hp. and two 1600-hp. equipments of the double range, frequency converter, constant torque type. They are rated as follows on the constant torque basis: Two machines were rated at 1440 or 1600 or 1760 hp. at 450 or 500 or 550 r.p.m., and one machine at 630 or 700 or 770 hp. at 450 or 500 or 550 r.p.m., the current supply being at 6600 volts, 25 cycles, 3 phase. The speed variation is obtained by means of a frequency converter on the same shaft as the induction motor. This frequency converter is the only auxiliary rotating machine required.

An improvement has been made in the control for tandem mill drives using separately excited compound-wound d.-c. motors. This consists of an adjustable rheostat in the separately excited series field which is mechanically connected to the operating mechanism of the main shunt field rheostat, so that the two rheostats are adjusted simultaneously. By the proper proportionment of resistance values, the compounding excitation at all speeds may be made such that the speed change under the load is less than 1½ per cent of the operating speed. The first installation using this system is in operation with very satisfactory results, and several other equipments are on order.

### Complete Change-Over in Old Mill

Despite the spread of electric drive, especially in new plants, it is not often that old mills are completely electrified. The rapidity of the changes made more noteworthy the recent electrification of a plant which has produced steel for more than a century. In less than three years from the first contract, all main and auxiliary drives were running electrically, the completion of the job being marked by the first operation of a 3500-hp. reversing motor driving a 36-in. blooming mill last May. The earlier improvements included the electrification of a 22-in. bar mill and a 24-in. structural mill, and the installation of a 2000-kw. rotary converter substation supplying d.-c. power to cranes and mill auxiliaries.

Automatic features which reduce the number of operators required, and speed up production, characterize the auxiliary control on a structural and merchant mill, consisting of a reversing rougher and five cross-country finishing stands. After the steel leaves the roughing stand all operations are fully automatic, the mill tables and transfers being started by flag switches or by interlocking from a preceding motion, and stopped by other flag switches or by limit switches at the end of the cycle of operation. The usually large operating crew has been limited to only a few men.

### Blooming Mill Safeguards

To prevent the drifting of metal back into reversing blooming mills, improvements have been made in the control for front and back roll tables. Two master switches are used, the No. 1 master rotating the tables toward the mill, and the No. 2 master rotating the tables away from the mill. In normal operation the No. 1 master only is used, the steel issuing onto a dead table, and the No. 2 master is used only when the piece becomes long, or to convey the piece away from the mill after rolling is completed.

On mills with well-alined roll-table bearings, the rolls often drift the metal back into the mill. Dynamic braking is now applied to the drifting motors of the tables as soon as the other motors are energized, thus stopping the table and preventing the metal from being returned to the mill until the master switch has been moved to the opposite position.

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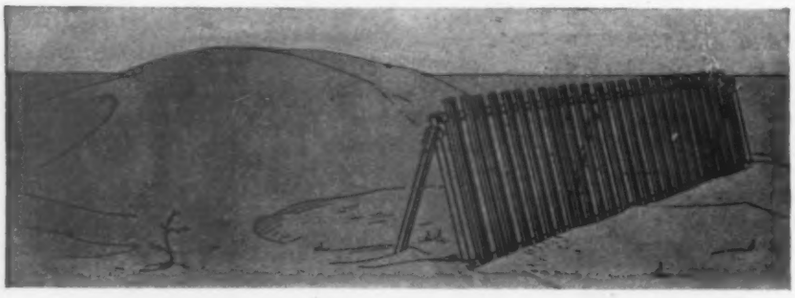
## ALL-METAL SNOW FENCE

### Another Use of Steel in a Portable Construction for Highways

Reduction of snow removal costs and another use of steel are promised by a new all-metal snow fence placed on the market by the American Rolling Mill Co., Middletown, Ohio. While not designed to take the place of snow removal, its use in many cases will tend to prevent drifts and make highways passable many additional days in winter, especially if they are isolated and do not have snow clearing service regularly.

The fence, being light in weight, can be moved quickly from one position to another. The principle is that the wind strikes the faces of the V-shaped vanes or slats, is deflected across the openings between them and is slowed down until it deposits the snow about 2 ft. behind the fence as shown in the accompanying illustration. Each installation has been studied to determine the best location, the effect on flurries, the checking force and the location of drifts. At the first flurry of snow the man patrolling a highway can haul the fence to the desired location and erect it easily with one man's help. For frozen ground frost pins can be driven into the soil.

Each unit of the fence weighs about 70 lb. The frames are made of angles 12 ft. long and 4 ft. high. A-braces, drilled at the bottom for the frost pins, are fastened to both ends and to the middle. The vanes are 3 in. wide and are placed 3 in. apart. Their V-shaped construction serves to give them strength to resist bending. The fence may be folded to less than 3 in. in thickness and piled along the roadway or stored in a small space. To minimize depreciation the material is galvanized.



*V - Shaped Vanes Slow Down the Wind and Cause Snow to be Deposited 9 Ft. Behind the Fence*

# Steel Head Discusses Outlook for 1927

## An Interview with John A. Topping, Chairman of the Republic Iron & Steel Co.

QUESTIONS regarding the business outlook are always uppermost in the minds of many at the beginning of each new year. THE IRON AGE sought the views of John A. Topping, chairman Republic Iron & Steel Co., on several topics of pertinent interest to those engaged in metalworking industries as makers, users or distributers of steel. A question which comes first to everyone's mind is:

**"What about 1927?"**

Mr. Topping answered this as follows:

"It may be that the record steel production and consumption of 1926 will not be equaled in 1927, yet I see no reason to anticipate any serious decline in business. Lessened activity in construction work is probable, but as an offset there may be increased demands from the railroads. Factors that should not be lost sight of are our normal growth of population and the constant growth of new uses of steel.

"The demands for steel brought about by our normal growth in population are strikingly shown by the automobile, truck and tractor industries. Notwithstanding pessimistic predictions of overproduction, the country's requirements for more efficient transportation and economic power have readily absorbed this growing output and doubtless will continue to do so.

"When it is considered that 1925 was a record year for steel production and that this record was exceeded in 1926 by a substantial margin, it is fair to assume that the country's normal requirements have of late enormously increased. This fact, taken in connection with unimpaired purchasing power, suggests that depression is far removed even though no 'boom' is in sight. The probability is that we have ahead of us a period of expanding demand to meet the needs of this great and growing country.

"The further fact that no surplus stocks of steel have been accumulated notwithstanding the large production of 1925 and 1926 is to me a significant indication of our growing power to consume what we produce."

This question was asked:

**"What significance, if any, do you attach to the gradual falling off in steel business during the last quarter of 1926?"**

To which he replied:

"There were abnormally large purchases in the third quarter of the year, and in consequence the last quarter was more or less a digestive period with consumption but little impaired. The history of the steel market over the past six years shows that seasonable influences have caused a decline in volume of business during the last half of every year since 1919, excepting 1922; also that great irregularity has existed in quarterly tonnage realized, so that nothing conclusive can be deduced by quarterly comparisons.

"Of more importance, as suggesting the future course of business, is the present soundness of the business structure; that is to say the absence of credit expansion and commodity speculation, coupled with low prices and minimum stocks. No business recession of major importance has taken place which was not preceded by a period of general expansion of credits followed by high prices and overburdened stocks. The steel trade has seldom been in a stronger technical position, as the market has been singularly free from adverse influences during the entire year. Purchases have been for requirements, with prices extremely low as related to costs, THE IRON AGE composite steel price being now about where it was at the beginning of 1926. The decline in prices of steel products since 1924 has been about $3 a ton, which, applied to the 1926 production, means a saving to consumers of about $100,000,000 in the year."

Another question was:

**"What is the outlook for greater participation by American steel companies in world trade?"**

Mr. Topping's answer was:

"Outside markets will continue unattractive until overproduction, brought about by the war, is absorbed by the growing demands of the world." He added that prices at which steel is sold by competing countries make export sales by American mills rather undesirable.

Touching on the steel import situation, Mr. Topping said that the European steel which has reached seaboard points shows that our tariff is not protective, but that it could be made more so if the anti-dumping clause was more rigidly inforced.

In conclusion, Mr. Topping was asked:

**"What conditions in the steel industry should be corrected to make for a more efficient and more economic situation in the production and marketing of steel products?"**

His answer to this follows:

"First of all the steel companies have had the problem of maintaining low costs under a high wage scale, with selling prices very close to the cost of production. In addition, the problem of marketing has been somewhat complicated by extensions to producing plants over widely scattered points, with the result that competition has been more severely localized as basing points have been extended. This situation is further complicated by inequalities in freight rates, both in assembling raw materials and in the distribution of finished products. Time will effect its own cure, but meanwhile there is a call for patience and for a selling policy which recognizes the spirit of 'live and let live.'"

Looking ahead, Mr. Topping predicted that the time may come sooner than is generally realized when the country shall have caught up with the abundant capacity of the steel industry. "Operations for 1926," he said, "were close to 90 per cent of capacity, and if our future growth measures up to what past experience has shown, we are not far from a seller's market."

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## Engineers in Civil Service

More than 3000 civilian professional engineers are in the employ of the United States Government, according to a pamphlet issued by the Civil Service Commission, Washington. Federal engineering operations are carried on in practically every part of the United States and outlying territories. There are nearly 700 civilian engineers in the War Department, 600 in the Department of the Interior, 600 in the Department of Commerce, 450 in the Department of Agriculture, 350 in the Navy Department, 250 in the Treasury Department, 200 in the Interstate Commerce Commission, and a considerable number in subsidiary bodies.

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Preliminary estimates of 1926 sales of manufactured gas point to an increase of about 8 per cent, according to the American Gas Association. As 1925, with 421.4 billions of cubic feet, was a record breaker, this means that 1926 also will break the record. House heating is a field in which the gas companies are very active.

# Tests of French Cast Iron Pipe

## In Comparison with American Pipe It Shows Equal Strength, Greater Hardness, but Lower Impact and Deflection Values

WASHINGTON, Jan. 11.—Completing exhaustive tests of 6-in. cast iron pipe manufactured in France and of similar pipe manufactured in the United States at seven different foundries, the Engineering Mechanics Section of the Bureau of Standards, in cooperation with other sections of the bureau, has found the French pipe inferior to all of the tested American pipes in deflection or bending qualities. These tests, in which the strength and the deformation of specimens were measured, showed that "the strength of the French pipe was about equal to that of the average American pipe," as the preliminary report reads. The bureau soon will publish a technologic paper describing the tests.

The relative merits of American and French cast iron pipe have become of particular moment in view of constantly increasing imports, the major portion of which come from France. During the 11 months ended November, 1926, French foundries supplied 48,864 gross tons of the 71,779 tons imported. In 1925, out of total cast iron pipe imports of 51,213 tons, France shipped 42,444 tons; while in 1924, with cast iron pipe imports of 46 900 tons, that country was the source of 22,701 tons, as against Belgian imports of 22,674 tons.

### Tests Made Under Standard Conditions

"Little has been known in the United States about the mechanical properties of the French pipe," the bureau report points out, "and the importation of the foreign product depended on price rather than on the properties of this material, as compared with the American product. The bureau was requested to make comparative tests between this pipe and pipe manufactured in this country."

The material for these tests was supplied and the specimens made by the Consolidated Gas Co., New York. All test pieces, selected by Frederic de P. Hone & Co., inspecting engineers, for the Consolidated Gas Co., "were cut from 'bell and spigot,' sand-cast pipe 6 in. inside diameter, approximately 12 ft. in length, and conforming to the dimensions specified by the American Gas Association. It was decided to select pipe of this diameter, as this size is in general use and is readily obtainable from the foundries."

Each length of pipe, except lengths from which French samples were cut, was inspected at the foundries by inspectors employed by the Hone company, and complied with the American Gas Association specifications. The French samples were given surface inspection only. "In selecting the pipe, every effort was made to obtain lengths representing the usual foundry output, and in no instance was pipe specially cast for this purpose."

### What the Tests Showed

"The French pipe was characterized by greater hardness, low impact values, and higher phosphorus content (about 1.85 per cent) than the American pipe," says the report. The phosphorus content of domestic pipe averaged 0.64 per cent. Hardness, transverse, crushing, shear, impact and hydrostatic tests were made. "The deflection of French pipe in the transverse and in the crushing tests and the impact values were lower than those of any tested American pipe. Its deflection in transverse test was much lower than that of American pipes."

The brittleness of the French pipe was judged "from the suddenness of failure in the crushing and transverse tests. The low deflection and brittleness," the report says, "were probably due to the higher content of phosphorus in the French pipe." The crushing test of the short sections (rings) cut out of pipe gave results which were fairly representative of the properties

## Distribution of Rolled Steel in 1926, According to Shipments of

### Also, Output of 93.3 Per Cent of Industry

| | Heavy Rails | Light Rails | Track Accessories | Plates | Structural Shapes | Bars |
|---|---|---|---|---|---|---|
| Railroads (incl. frog, car and loco. co's.) | 2,462.2 | 0.8 | 790.7 | 906.4 | 513.2 | 532.3 |
| Fabricators and bldg. contractors | 1.4 | .8 | .1 | 589.6 | 1,669.1 | 674.0 |
| Auto. and parts mfrs. | .... | .... | .... | 176.8 | 37.7 | 1,526.4 |
| Oil, gas and water co's. | .... | 7.2 | .... | 460.8 | 89.9 | 75.4 |
| Mining and lumber co's. | 18.8 | 87.1 | 11.4 | 18.6 | 11.8 | 30.5 |
| Agricultural equipment | .5 | .... | .1 | 44.7 | 11.8 | 171.1 |
| Metal containers | .... | .... | .... | 21.3 | 1.4 | 5.6 |
| Shipbuilding | .... | .... | .... | 118.0 | 46.5 | 33.3 |
| Machinery and hand tools | 1.1 | 1.4 | .1 | 70.8 | 61.1 | 401.2 |
| Jobbers and warehouses | 25.6 | 5.5 | 11.9 | 153.3 | 337.7 | 497.6 |
| Exports | 188.5 | 6.8 | 24.5 | 146.7 | 154.0 | 136.7 |
| Miscellaneous | 17.8 | 5.3 | 11.5 | 271.0 | 129.8 | 582.1 |
| Totals | 2,715.9 | 114.9 | 850.3 | 2,978.0 | 3,064.0 | 4,666.2 |
| Shipments, 21 companies undistributed | 230.9 | .... | 78.1 | 308.3 | 249.1 | 753.4 |
| **Totals (93.3 per cent of total production)** | 2,946.8 | 114.9 | 928.4 | 3,284.3 | 3,313.1 | 5,419.6 |

IN printing the table on pages 8 and 9, issue of THE IRON AGE of Jan. 6, covering the returns for the production and distribution of steel in 1926, a line was omitted showing the figures supplied by the producers of over 93 per cent of last year's output. Accordingly the table is here reprinted with the addendum. Distribution details were obtained for 73.3 per cent of the

of pipe and were comparable with the results of the transverse test. The crushing test was, therefore, suggested as a substitute for the transverse test of arbitration bars or coupons. The advantage of this test, the report said, is that the test specimen is truly representative of the material of the pipe from which it is made.

**Considerations of Service Conditions**

In choosing between two pipes of equal strength, but one of which deflected more than the other before rupture occurred, it was explained that naturally the former would be selected. It is evident that small settling of the ground, for instance, would be withstood by the first pipe better than by the second, because of the greater ability of the former to adjust itself to the new conditions. If, however, the settling continued and the load, due to the earth pressure or to other causes, were too great, both pipes, of course, might be broken.

"The impact resistance of the French pipe was found to be about three-fourths of the average of all other specimens," the report says. "It is impossible to determine from these tests whether or not this lower impact resistance would cause failure of the French pipe in service under conditions for which the American pipe would be satisfactory. Apparently the French pipe must be handled somewhat more carefully than the American pipe, to avoid damage to the pipe.

"When the pipe is in place in the ground, the cushioning effect of the earth would in all probability reduce the impact stresses to such an extent that the pipe would fail only when the static load exceeded its strength. It is evident that, in the case of non-uniform settlement of the ground, of two pipes having the same strength but unequal deflection, the pipe which has a greater deflection would be safer.

"The average values of the bursting pressure for all specimens were greater than five times the specification value of 300 lb. per sq. in. and in no case did bursting occur at pressures lower than 700 lb. per sq. in." Comparatively few defects were found in any of the pipe examined. All of the pipes were sound and complied with the existing specifications for the hydrostatic test.

Details of the tests and test results will be published in a later article.

## Navy Purchasing Office Asks for Suggestions

WASHINGTON, Jan. 11.—Constructive criticism and suggestions regarding its purchasing procedure have been asked of the business world by the Navy Department in an effort to further extend business relations and to cooperate more fully with sources of supply for the department's material requirements. The survey under way is in line with the policy of Rear-Admiral Charles Morris, paymaster general of the Navy, to have the bureau of supplies and accounts, the central purchasing office of the Navy, make its purchases conform to standard commercial practices so far as possible, within the limiting provisions of the law and the special requirements of the Naval services, in order to obtain the best possible prices consistent with quality.

Over 10,000 copies of a circular letter bearing the subject, "Cooperation," have been sent to prospective sources of supplies for the Navy. In this letter the Navy invites comment on the clearness of its specifications and proposal forms, on its packing requirements, the quantities purchased, the method of grouping items and the time of year of purchase. Within three weeks after the letter was distributed approximately 2000 replies had been received.

During the last fiscal year the bureau of supplies and accounts placed orders for supplies and equipment totaling $55,344,574.12. The bureau issued 2889 schedules, received 14,407 proposals and awarded 4698 contracts and bureau orders.

## Two Westinghouse Companies Merged

The Westinghouse Electric Products Co., Mansfield, Ohio, and the George Cutter Co., South Bend, Ind., subsidiaries of the Westinghouse Electric & Mfg. Co., have been merged with the parent company and have been designated as the Mansfield works and the street lighting department, respectively. The latter includes the South Bend works, which is one of the largest in the country devoted to the manufacture of street lighting equipment, with branches for the manufacture of poles of the "hollowspun" type located in Milwaukee, St. Louis and Valdosta, Ga. The Mansfield works is devoted to the manufacture of domestic electric appliances, including ranges, ovens and safety switches.

## 27 Companies Producing Over 73 Per Cent of the Year's Output

**Amounts Given in Thousands of Gross Tons**

| Hoops, Bands, Strips | Tin Plate | Sheets | Pipe and Tubes | Wire Products | All Other Finished | Billets and Slabs | Sheet and Tin Bars | Wire Rods | Skelp | Totals |
|---|---|---|---|---|---|---|---|---|---|---|
| 13.8 | .... | 138.1 | 33.7 | 52.5 | 294.2 | 80.0 | .... | .... | .... | 5,817.9 |
| 86.8 | .... | 179.2 | 18.2 | 123.1 | 94.6 | 17.4 | .... | 8.3 | 0.8 | 3,463.4 |
| 513.7 | .... | 841.3 | 11.1 | 109.8 | 7.9 | 183.8 | 131.2 | 1.4 | 3.1 | 3,544.2 |
| 14.4 | 37.4 | 95.1 | 914.9 | 31.4 | 26.4 | 33.8 | .... | .... | 84.2 | 1,870.9 |
| 5.6 | .... | 5.8 | 4.5 | 15.8 | 4.2 | .8 | .... | .... | .... | 214.9 |
| 33.4 | .... | 65.6 | 10.2 | 354.4 | 7.2 | 24.7 | .... | 55.8 | .... | 779.5 |
| 46.4 | 774.3 | 95.4 | .... | 20.9 | 6.0 | 6.1 | 34.5 | .1 | .... | 1,012.0 |
| .3 | .... | .9 | 1.7 | 2.7 | 3.9 | 14.0 | .... | .... | .... | 221.3 |
| 17.4 | .... | 58.3 | .... | 37.2 | 30.5 | 57.1 | .... | .... | .... | 736.2 |
| 82.3 | 17.1 | 275.2 | 998.6 | 473.2 | 83.6 | 18.6 | .... | 10.0 | .... | 2,990.7 |
| 21.8 | 312.5 | 236.3 | 195.8 | 102.6 | 45.9 | 1.2 | .... | 8.2 | 15.7 | 1,597.2 |
| 222.4 | 176.2 | 685.2 | 236.1 | 464.1 | 80.3 | 213.0 | 102.5 | 63.8 | 11.6 | 3,272.7 |
| 1,058.8 | 1,317.5 | 2,676.4 | 2,424.8 | 1,787.7 | 684.7 | 650.5 | 268.2 | 147.6 | 115.4 | 25,520.9 |
| 202.6 | 369.9 | 602.8 | 938.6 | 275.2 | 105.4 | 746.2 | 1,197.9 | 365.3 | 490.4 | 6,914.1 |
| 1,261.4 | 1,687.4 | 3,279.2 | 3,363.4 | 2,062.9 | 790.1 | 1,396.7 | 1,466.1 | 512.9 | 605.8 | 32,435.0 |

production but for 20 per cent only lump sums were given of the different forms of steel made. With a knowledge of the general character of the business of the missing 6 to 7 per cent, a fairly close approximation could be made for the entire 100 per cent, both with respect to products and the industries which took them.

# Prices of Steel and Other Products

## Metals Lower Than Most Other Commodities—Changes in Past Year—Course of Future Prices

BY SIDNEY G. KOON*

COMPOSITE prices of both pig iron and finished steel ended the year at not far from the average level maintained during the year. That for pig iron on the last quotation was $19.88, or less than 3 per cent below the 20.42c. average for the 12 months. Its maximum of $21.79 at the beginning of the year persisted through several weeks. Its minimum was $19.46, over a period of ten successive weeks covering all of August and September. The pig iron average for the year was the lowest since 1916.

For finished steel the year ended with the price level exactly the same as at the beginning. For the last 12 weeks of the year this level stood at 2.453c. per lb., just as it had stood for the first two weeks of the year and the last four weeks of 1925. This also was the highest of the year. The low point was reached in the latter part of May, when the price sagged to 2.403c. per lb. Except for 1922, the year's average of 2.439c. per lb. was the lowest since 1915. It compares with 2.465c. in 1925.

Prices of other commodities, with the few notable exceptions, have maintained their position well above those for metals. Of all the 34 items listed in our table, which compares prices of the same items we have thus studied at intervals for several years, only gasoline, shingles and cotton stand lower than metals, including steel beams and pig iron. Chemicals and drugs are close to the metals figure. And it is a matter of common knowledge that automobiles are lower in price than in 1913, besides being of higher quality.

To form a uniform basis for comparison, prices of the various products considered have in all cases been referred to their several levels in 1913. It does not necessarily follow that the inter-relationship of prices in 1913 was either normal or ideal, or that prices at that time were, in general, logically related to each other. In some instances they certainly were not. Nevertheless the widespread use of 1913 as a basis for studies of this character, and the ready availability of its figures for statistical comparison, make it in many respects the best comparative basis we have.

*Associate Editor, THE IRON AGE, New York.

Previous articles on this subject have been published in THE IRON AGE of July 2, 1925, page 8; Jan. 1, 1925, page 46; June 26, 1924, page 1870; Jan. 3, 1924, page 108, and at earlier dates. The products covered include specific items or commodities, and also the large wholesale groups reported upon monthly by the United States Bureau of Labor Statistics. These latter, comprising altogether 404 separate items, are given only in index numbers based upon 1913.

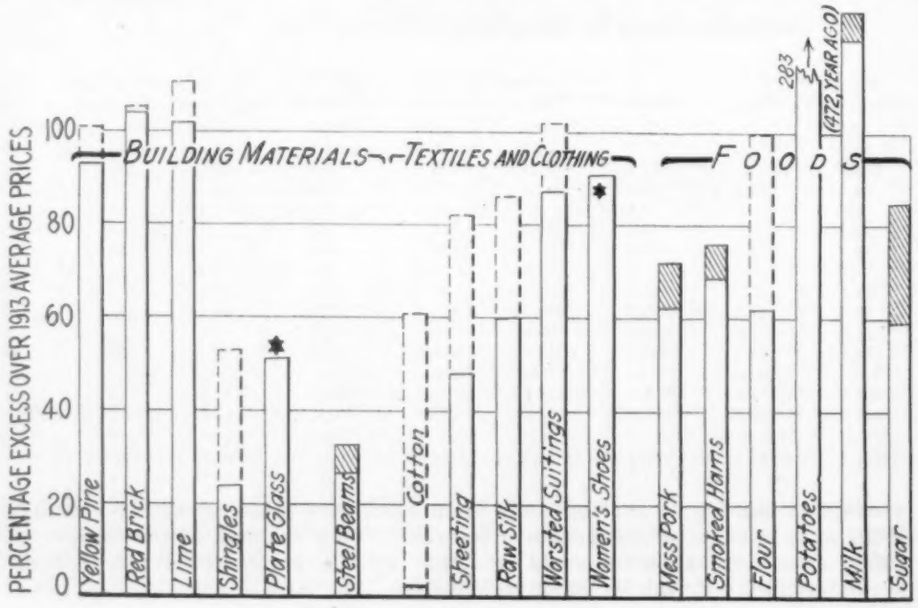
### Many Leading Items Compared

Prices of other materials are shown in our table, both in their specific value in dollars and cents and in the index number form. They are grouped in the diagrams under the headings of building materials, textiles and clothing, foods, and fuels, to which are added the item of steel beams, and the composite prices for both pig iron and finished steel.

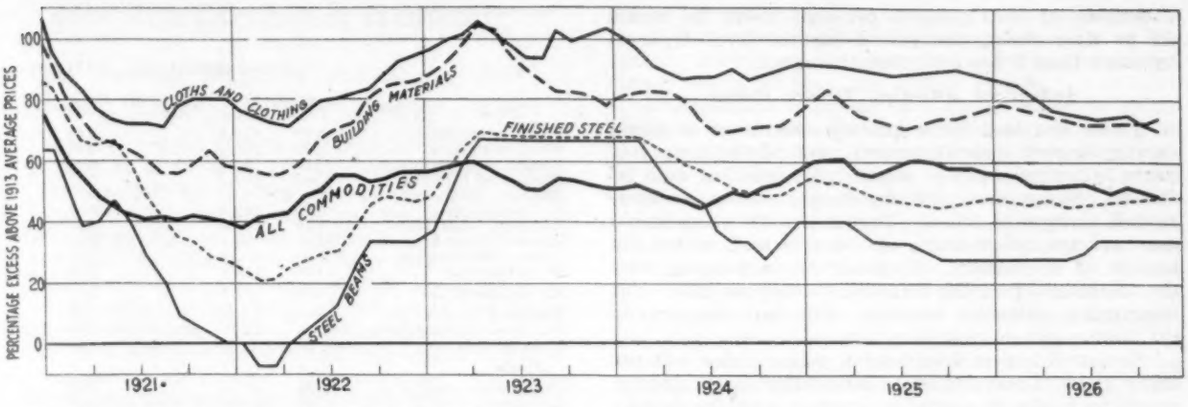
Twenty-two specific items outside the iron and steel group are: Five fuels: bituminous coal, anthracite, furnace coke, Pennsylvania petroleum and gasoline; six building materials: yellow pine, red brick, cedar shingles, lime, plate glass and steel beams; five items of textiles and clothing: raw cotton, cotton sheeting, raw silk, worsted suitings, and women's shoes; six items of foods: mess pork, smoked hams, white potatoes, flour, milk and granulated sugar.

Prices quoted are drawn from a variety of sources, including market reports of various trade and other publications, and official reports from Washington. Steel beams, finished steel, pig iron and furnace coke are taken from THE IRON AGE weekly quotations. The prices have been translated into three diagrams, two of which show the individual items. These indicate not only the relation of present prices to those of 1913, but also their relation to those of one year ago.

These two diagrams are based on the excess of the various prices over those of 1913. The shaded area, where present at the top of a column, shows that today's price is higher than that of a year ago. The excess is indicated by the height of the area shaded. Where today's price is lower than last year's price, that




*Steel Beams Are Shown to Be 33 Per Cent Higher Than in 1913; But All the Other Items, Except Cotton and Shingles, Are From 48 to 283 Per Cent Higher. Beams, meats, milk and sugar are now above the prices of a year ago, as shown by cross-hatching. Dotted tops of columns indicate last year's prices, higher than now. Stars show no change*




*Six Years of Price Changes in Finished Steel and Steel Beams, Compared With Cloths and Clothing and Building Materials, and With the General Average of "All Commodities" Reported by the United States Bureau of Labor Statistics*

fact and its extent are shown by dotted lines above the solid lines which represent the present price in its relation to that of 1913.

### Steel Prices Well Liquidated

In the other diagram the history of prices of certain groups of commodities, together with steel beams, is traced across the past six years. It will be noted that both finished steel and steel beams are at a considerably lower level than is the case with the "all commodity" group of the Bureau of Labor Statistics. They are much further below the reported prices of building materials and cloths and clothing.

In other words, the prices of finished steel, and particularly that of steel beams, have been more nearly liquidated, so to speak, than have the prices of most other commodities. Not once during the period surveyed has the price of steel beams been so high as either building materials or cloths and clothing. Not once did finished steel reach the level of clothing, while in only one month in many years has it exceeded building materials. The prices of steel products have been thus consistently lower than those of most other products. But this has been disastrous to profits.

Study of the relation of steel beams to the other building materials and to the other items is illuminating. Beams are 33 per cent above 1913. The five other building materials range from 24 to 104 per cent above 1913, with an average of 75 per cent up, or more than twice the excess shown by steel beams.

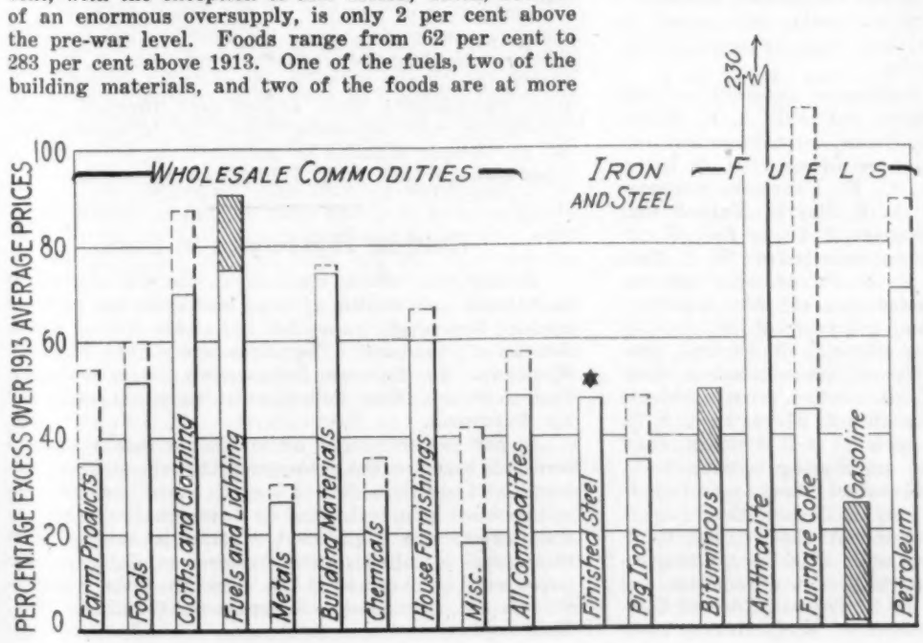
Fuels, except for gasoline, are 45 to 230 per cent above 1913. Textiles show excesses of 48 to 91 per cent, with the exception of raw cotton, which, because of an enormous oversupply, is only 2 per cent above the pre-war level. Foods range from 62 per cent to 283 per cent above 1913. One of the fuels, two of the building materials, and two of the foods are at more than double their pre-war prices, anthracite and potatoes being at more than three times the 1913 level.

### Stabilization Not Yet a Fact

While there is somewhat less dislocation of prices than was the case a year ago, the change is moderate. Of the specific items listed, 13 have shown a reduction during the year, while 7 have increased. For anthracite there is no comparison, because of the strike of a year ago. Finished steel, plate glass and women's shoes have not recorded any change. Looked at in another way, 17 of the specific commodities have moved closer to the general average or "all-commodity" price, while 11 have moved further away from it than they were last year. This is a slightly longer step forward toward stabilization, so to speak, than was observed a year ago, when the movement of 17 items was nearer to the average, while 15 moved further away.

This movement toward greater uniformity of prices, which has been noted several times during the past two or three years, is noted in all of the highest priced items in the Department of Labor groups, with the exception of fuels, which have increased in price and consequently widened the gap.

Little change has occurred in the level of the "all-commodities" figure in nearly five years. Since April, 1922, it has not once been below 144, nor above 161. During the 56 months, the mean level has been above 153. The latest available figure, that for November, stands at 148.1, or more than 3 per cent below that mean level. This is in contrast with a year ago, when




*Prices of "All Commodities" Have Lowered Since a Year Ago, as Shown by the Dotted Top of the Column. Finished steel, a little lower than the general average, is the same as last year, as shown by the star. Items with cross-hatching are higher than a year ago, to the extent of the hatched area. Metals in general are among the lowest priced items of all*

November at 157.7 stood 3 per cent above the mean. At no time during the period has the level departed by more than 6 per cent from its mean.

### Influences Affecting Future Prices

Those who look for a gradual subsidence of prices during the next quarter-century point to the history of years following previous world upheavals, but well informed opinion does not expect any steady, uninterrupted, downward trend. That prices 20 years hence may average below those of today is well within the bounds of probability. It would be in keeping with the teachings of all the economic history we have. But intervening obstacles certainly will halt temporarily the slow march in that direction.

Enhanced and still advancing wage scales will not easily yield. Local and State taxes have shown steadily mounting totals, in alarming contrast with the rapidly lowering exactions of the Federal Government. Inherently complicated distribution systems must give way to simpler systems. Artificial stimulation of certain prices, such as that recently produced by British manipulation of rubber output, has no place in an economic and economical ordering of world supplies.

To offset these adverse factors we have a steady progress in the elimination of waste. This enters both into materials and into human effort. Simplification of material produced in manufacturing is a large element in the conduct of Mr. Hoover's administration of the Department of Commerce.

Large scale production of materials for consumption is growing. Its outstanding example perhaps is in the automobile industry. Here, in the face of mounting unit costs of raw materials and higher hourly costs for labor, it has succeeded in turning out its product at a price actually lower than that of a dozen years ago.

All of these elements acting to neutralize high wages, taxes and distribution costs must have their effect. Competition is too direct and intense to prevent it. Sporadic manipulation of prices, as in rubber, will be but as a flea-bite in the progress of events. Prices ultimately will be lower, but not to any very great extent in the immediate future.

| Item | Prices Quoted — Average, 1913 | One Year Ago | Recent Figure | Index Number (1913=100) Peak, 1920 | Recent Figure |
|---|---|---|---|---|---|
| Farm products | 100 | 153.9 | .... | 247 | 134.6 |
| Food, etc | 100 | 160.2 | .... | 248 | 151.1 |
| Cloths and clothing | 100 | 187.9 | .... | 346 | 169.9 |
| Fuels and lighting | 100 | 174.8 | .... | 281 | 190.2 |
| Metals and metal products | 100 | 129.8 | .... | 203 | 126.5 |
| Building materials | 100 | 175.6 | .... | 300 | 174.0 |
| Chemicals and drugs | 100 | 135.4 | .... | 213 | 128.5 |
| House furnishings | 100 | 165.9 | .... | 275 | 159.9 |
| Miscellaneous | 100 | 142.0 | .... | 208 | 117.7 |
| All commodities | 100 | 157.7 | .... | 247 | 148.1 |
| *Finished Steel* | 1.663c. | 2.453c. | 2.453c. | 239 | 147.5 |
| *Pig Iron* (composite) | $14.70 | $21.79 | $19.88 | 325 | 135 |
| *Steel Beams* | 1.50c. | 1.90c. | 2.00c. | 207 | 133 |
| *Fuels:* | | | | | |
| Bituminous coal | $1.34 | $1.80 | $2.00 | 746 | 149 |
| Anthracite | 3.82 | strike | 12.62 | 209 | 330 |
| Furnace coke | 2.41 | 5.00 | 3.50 | 735 | 145 |
| Penna. petroleum | 1.79 | 3.30 | 3.05 | 341 | 170 |
| Gasoline | 16.8c. | 17.0c. | 21.0c. | 185 | 125 |
| *Building Materials:* | | | | | |
| Yellow pine | $28.50 | $57.25 | $55.00 | 237 | 193 |
| Red brick | 6.56 | 13.88 | 13.86 | 333 | 204 |
| Lime | 4.43 | 9.32 | 8.96 | 268 | 202 |
| Shingles, red cedar | 1.97 | 3.00 | 2.43 | 334 | 124 |
| Plate glass | 31.8c. | 48.0c. | 48.0c. | 258 | 151 |
| *Textiles and Clothing:* | | | | | |
| Raw cotton | 12.84c. | 20.65c. | 13.05c. | 341 | 102 |
| Sheeting | 7.3c. | 13.3c. | 10.8c. | 390 | 148 |
| Raw silk | $3.65 | $6.80 | $5.84 | 445 | 160 |
| Worsted suitings | 1.38 | 2.79 | 2.59 | 392 | 187 |
| Women's shoes | 2.17 | 4.15 | 4.15 | 380 | 191 |
| *Foods:* | | | | | |
| Mess pork | $20.93 | $34.00 | $36.00 | 225 | 172 |
| Smoked hams | 16.60 | 28.15 | 29.25 | 227 | 176 |
| Flour | 4.62 | 9.25 | 7.50 | 352 | 162 |
| Potatoes | 61.4c. | 3.51 | 2.35 | 721 | 383 |
| Milk | 3.5c. | 7.7c. | 7.9c. | 243 | 226 |
| Sugar | 3.46c. | 5.5c. | 6.4c. | 536 | 185 |

## Allegheny Steel Co. Dinner Attended by Entire Staff

The annual dinner of the executives and department heads of the Allegheny Steel Co. at the Pittsburgh Athletic Association clubhouse Tuesday evening, Dec. 21, was unusual in that for the first time it was possible to have a full attendance of officers, directors, managers and department superintendents. It was an affair that permitted contacts that are not easily possible in the ordinary conduct of industrial units of the size of this company, and it was the general expression of those present that the gathering had served to strengthen the cooperative and friendly spirit of the members of the organization.

Those present: W. L. Dankmyer, assistant auditor; W. A. Givens, superintendent rod mill; A. E. Miller, master mechanic; G. W. Evans, superintendent bar mill; W. E. Caugherty, chief metallurgist; H. D. Utley, superintendent foundries; C. F. Fuhrman, manager accounting department B; L. E. Harris, Main & Co.; W. S. Diggs, president Hoover & Diggs Co.; H. D. Rise, superintendent finishing department; W. F. Detwiler, general manager; H. B. Pavitt, chief accountant; W. M. McArdle, assistant general sales manager; J. R. Taylor, assistant chief engineer; H. M. Arbuthnot, manager Detroit sales office; E. R. Perkins, production manager; H. A. Young, superintendent open-hearth department; C. C. Henderson, vice-president; T. G. Seixas, president Chandler & Floyd, Inc.; A. R. Brucker, superintendent tube mill; O. B. Linquist, chief engineer; E. L. McGraw, purchasing agent; S. C. Hookey, superintendent electrical sheet department; F. H. Stephens, secretary; A. C. Tucker, chief inspector; R. R. Curry, superintendent sheet mills; C. J. Lucas, superintendent wheel mill; J. O. Carr, vice-president; W. E. Hanna, superintendent automobile and pickled sheet department; H. R. Connell, General Electric Co.; H. E. Sheldon, president; M. C. Harris, manager service department; F. H. Walker, manager welfare and employment departments; P. F. Voight, Jr., general sales manager.

## Morgan Engineering Co. Reorganized

Reorganization of the Morgan Engineering Co., Alliance, Ohio, has been effected by the creditors' committee and became effective Jan. 1. W. H. Ramsey has resigned as director and secretary, J. E. Anderson as vice-president and general manager, and N. C. Fetters and C. L. Taylor as vice-presidents. William J. Stoop, formerly general engineer of the Wheeling Steel Corporation, was made general manager and executive officer representing the creditors' committee. A. V. Cannon, R. A. Cannon, J. V. Taggert, Cleveland, and J. E. Birr, Philadelphia, were named new directors representing the creditors' committee of the old organization. W. H. Morgan remains as president, A. F. Morris as sales manager, and C. L. Taylor as chief engineer.

## Statical Hysteresis in Bars

Elastic time effects observed in the deformation of any elastic body during a closed load cycle are reported upon in technologic paper No. 332 of the United States Bureau of Standards. The paper was written by G. H. Keulegan. He discusses Boltzmann's theory and finds that there are other influences at work not explained by Boltzmann.

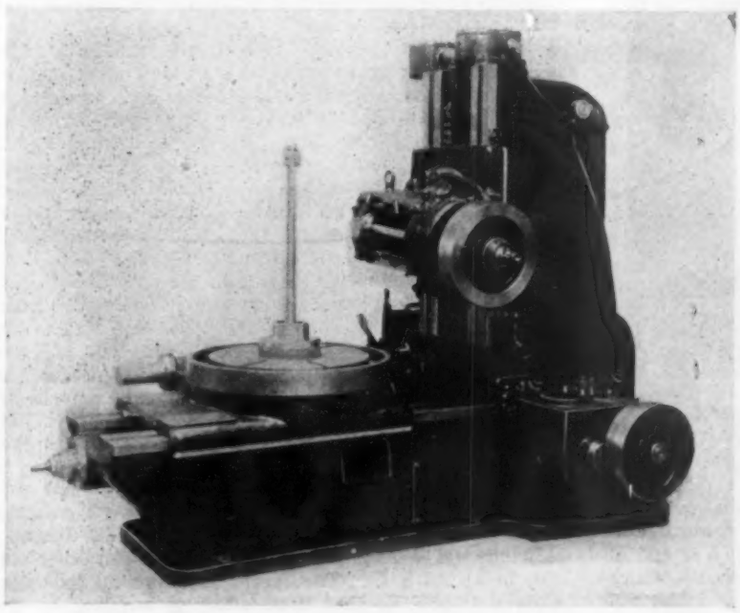
In the present paper an additional theory of hysteresis is based on the assumption that the stress-strain relation of elastic bodies in a cyclic state is given by a symmetrical loop, instead of by a straight line, when the time effects are negligible. Hysteresis arising from this source is called statical hysteresis. Copies of the paper may be obtained at 10c. each from the Superintendent of Documents, Government Printing Office, Washington.

## IMPROVED GEAR HOBBER

### Larger Driving Members and Shafts and Increased Weight Allow for Heavier Service

Increase of more than 20 per cent in weight and the incorporation of oversize driving members and shafts, to provide for heavy-duty production service, are features of an improved model of the Schuchardt & Schutte gear hobber being marketed by the George Scherr Co., 142 Liberty Street, New York.

Improvements in the cutter spindle are stressed as providing smoother operation of the cutter and better finish of the work. The cutter spindle is driven by means of helical gears instead of spur gears and is of three-bearing construction. It is equipped with a flywheel mounted directly on the spindle which need not be removed for any class of work. The cutter-head is of rigid construction and is located close to the upright, with little overhang. Adjustable taper gibs have been provided to take up any play. The casting is of semi-circular design, practically enveloping the hob, which construction is stressed as permitting the location of bearings close to the hob and preventing vibration of arbor under heavy cuts. Both bearings are tapered and are adjustable for wear.



*Spur and Helical Gears May Be Hobbed and By Using a Special Tangential Feed Cutter Head and Tapered Hob, Worm Wheels Can Be Hobbed*

The ways of the bed are flat and wide and the carriage is supported close to the spindle. The table bearings consist of V-shaped ways, a flat bearing and a cylindrical bearing, the construction being intended to prevent vibration or sagging of the table under the heavy cuts and table loads. The table is provided with a large bore to facilitate the cutting of pinions with shafts, and the carriage feed screw is offset so that the bore is not obstructed. The dividing worm gear is located directly under the table and is of practically the same diameter. The worm is hardened and ground, runs against hardened steel washers, and has provision for adjustment.

All control levers are located within convenient reach of the operator. Changes of speed and feed are obtained through gear boxes. Nine changes of feed are obtainable and these changes can be made while the machine is running. Stops are provided for automatically tripping the vertical feed to cutter-head and horizontal feed to the table. Power rapid traverse is provided for both the cutter-head and table; also hand adjustment for the cutter-head and for the table. Quick return of cutter head is independent of feed mechanism, therefore, when cutting helical gears in two cuts the rapid return is used without losing the head of the spiral. Rapid traverse and feed are locked automatically against simultaneous accidental engagement. The feed screw for the cutter-head is supported by a bearing at the top and bottom and very close to the guides. As a protection against chips the feed screw to the table is housed in telescoping tubes, while the column below the cutter-head has sliding guards.

The machine is driven by a single pulley or by individual motor through the quick-change gear box in the rear of the column, furnishing eight instant changes of cutter speeds. To secure a maximum of constant power and to eliminate vibration additional flywheels are placed on the main horizontal and vertical driving shafts on the inside of the machine. Index, feed and differential gears are oiled automatically by special lubricating device. A coolant pump is provided.

The machine can be equipped with a special tangential feed cutter-head for producing worm wheels by tapered hob, and this head can be used also for cutting spur gears as well as helical gears up to 150 deg. angle.

## Machine for Rapid Marking of Short Cylindrical Pieces

A marking machine with horizontal dial and intended for marking short cylindrical parts, such as ferrules for tool handles, light sockets, bronze bushings, etc., on a production basis has been placed on the market by the Noble & Westbrook Mfg. Co., Hartford, Conn. All operations except loading of the work on the dial are automatic.

*Marking of Cigar Lighter Parts by Machine at Right Is at Rate of 125 Per Min.*

The machine is mounted on a pedestal as shown and is usually equipped for motor drive. The revolving dial which carries the parts to be marked is driven by a worm and gear which runs continuously in a bath of oil. The parts to be marked, if requiring the support of a mandrel, are placed on the mandrels as shown on the dial. The dial revolves, carrying the work across the face of the die, which gives the desired mark, the work being then unloaded automatically by means of a cam-operated unloading device. The machine is a further development of the bench type unit of similar construction previously built by the company. Production is said to be at the rate of approximately 125 pieces per min. The weight of the machine is 200 lb. and the floor space required is approximately 20 by 24 in.

## Machine for Setting 5/16 to ½ In. Nuts

Equipment recently placed on the market for setting nuts at high speed is shown in the accompanying illustration. This machine, built by Teer, Wickwire & Co., Jackson, Mich., is set up to put the nuts on automobile wheel hubs, but is adapted for use on any assembly that can be conveniently moved under the spindle.

The hopper selects the nuts automatically with the face up, and delivers them to a trough, which conducts them to the wrench head at the end of the spindle. The nuts are then forced into the spindle, one at a time as needed, through an opening that registers with the end of the trough when the spindle is in the up position. They are then forced down into the lower end of the socket wrench by a pusher inside the spindle, which also furnishes a solid backing for the top of the nut and prevents cross-thread starting.

*The Machine Is Set Up to Put Nuts on Automobile Wheel Hubs. Operation is controlled by the foot pedal*

The operator merely lines up the screw to receive the nut beneath the spindle and depresses the foot treadle. The spindle then comes down, rotating at high speed, and the nut engages the screw and is almost instantly screwed up to the required tension, which is predetermined by the tension on a friction clutch. The operator then permits the treadle to return, the friction clutch is disengaged and the spindle returns to the up position where it receives a new nut and the operation is ready to be repeated.

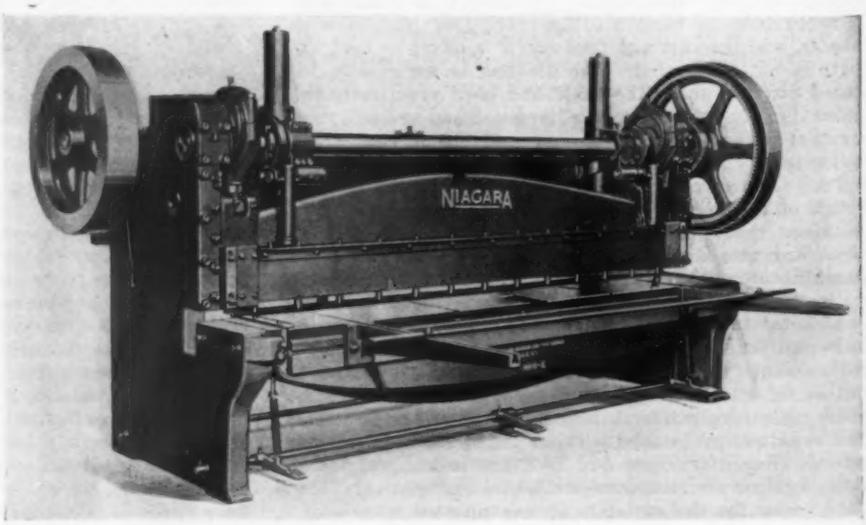
The machine illustrated is designated as the No. 4 and its capacity is for nuts ranging in size from 5/16 to ½ in. inclusive. It can be changed quickly from one size of nut to another. The machine is arranged for motor drive, a 2-hp.motor being employed. Other sizes of the machine are being brought out, among which is a small bench type unit for setting small nuts ranging in size from No. 4-32 to 3/16 in.

## New Holddown for Niagara Squaring Shears

The Niagara Machine & Tool Works, Buffalo, has applied for patent on a squaring shear holddown which is featured as combining light weight and rigidity. The device is adapted particularly for long squaring shears and is furnished on the company's medium capacity machines, No. 14 gage and heavier, having a cutting length of 8 ft. or longer. It is said that in clamping the sheet more securely and uniformly, a cleaner and more accurate cut is obtainable. The arrangement is also claimed to permit of unusual visibility of the cutting line.

The holddown works automatically and is timed to grip the sheet firmly until the cutting is completed. The horizontal member of the device is a steel channel, which is guided on finished surfaces at both ends. Each foot of the holddown has an individual spring cushion and is independently self-adjusting for wear and different thicknesses of material. Unevenness of metal, kinks in the sheet, dirt and other foreign matter are said to be compensated for locally without disturbing the gripping pressure at any other part of the holddown. Sheets shorter than the shear's length are gripped with equal uniformity and without tilting the holddown, regardless of whether they are cut in the center or toward the ends of the shear. The pressure exerted by each foot is independently adjustable, so that varying or uniform clamping pressure may be secured if desired. The gripping pressure of the individual feet, for instance, can be set to give higher pressure toward the ends of the shear, decreasing to the center, or vice versa.

The two cams that operate the holddown are on the main shaft of the shear, close to the heavy center bearings. The cam rollers are of hardened steel and run in an oil bath. The levers actuated by the cams close a toggle, so that little effort is required by the cams to exert considerable pressure on the holddown. The closed toggle links bring the holddown into play, and transmit the pressure stresses directly to the housings. This is emphasized as relieving the moving parts of heavy vertical stresses. When the toggle is broken after the cut has been completed, the holddown is raised by springs, these springs being of the compression type and completely incased.

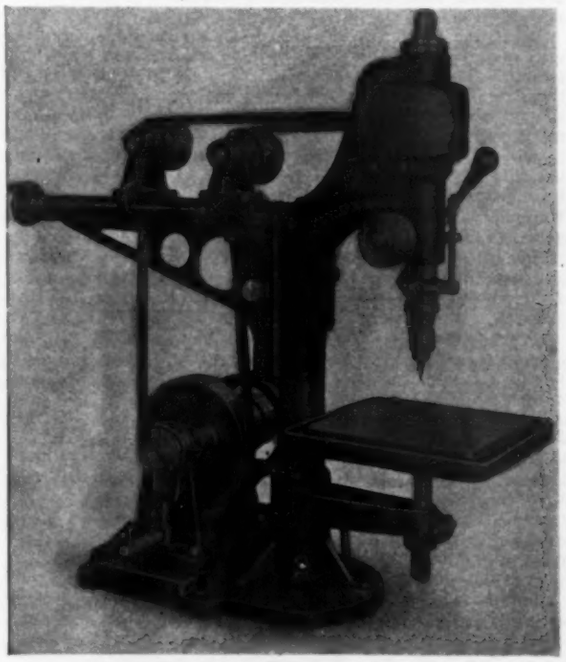



*Each Foot of the Holddown Has an Individual Spring Cushion and Is Independently Self-Adjusting for Wear and for Varying Thicknesses of Material. (Patent applied for)*

## High-Speed Drilling Machine

Four spindle speeds ranging from 3600 to 10,000 r.p.m., have been provided for the 12-in. drilling machine here shown, which is being placed on the market by the Buffalo Forge Co., Buffalo. Change from one speed to another is made conveniently by means of a lever and quick-acting screw. The machine is intended for production work and in addition the high speed, accuracy and minimum breakage of drills are claimed.

The machine is being built for direct motor drive, a ½-hp. motor being employed. Ball bearings are used throughout, and the chuck provided is the Jacobs



*The Machine Drills to Center of 12-In. Circle. Spindle speeds up to 10,000 r.p.m. are obtainable*

No. 3C, with capacity 0 to 5/16 in. The overall height of the drill is 34 in. The travel of the spindle is 3½ in. and the spindle diameter is 7/16 in. The maximum distance from the spindle to the table is 6½ in. The machine weighs 215 lb. net.

## Brass Companies Consolidated

The Chase Companies, Inc., Waterbury, Conn., have purchased the assets and good will of the U. T. Hungerford Brass & Copper Co., New York, with mills at Waterbury. Stockholders of the Chase Companies, Inc., have voted to increase the capitalization from $10,000,000 to $12,000,000 by an issue of 20,000 additional shares of common stock.

## Stainless Steel Discussed

"An Important Publication of Stainless Steel" has been recently released by the Department of Engineering Research, University of Michigan, Ann Arbor, Mich., as Engineering Research Bulletin No. 4. It is a digest, with abstracts and a bibliography, by Prof. Albert E. White and Claude L. Clark.

The bulletin is arranged in four parts in order to be of service to four different classes of readers. The digest, which sketches briefly the facts regarding stainless steel, is intended to be useful to those who desire a condensed statement of the whole story. The abstracts of important articles on stainless steel will serve those who wish to read the evidence of the original authorities on the subject, without themselves going into an exhaustive search of the literature. The bibliography, which has been brought down to the date of publication, November, 1926, is intended to economize the time of those interested in carrying on further research on stainless steel. The charts are chosen to give the technical man, accustomed to the interpretation of such material, a rapid survey of the subject. The bulletin should appeal therefore to the casual reader, the research scholar or the technical expert.

## Reduction Gear for Use with Climax Engines

A 3½ to 1 reduction gear for use with its models TU, R4U and R6U gasoline engines, the normal speed of which averages around 950-1000 r.p.m., has been placed on the market by the Climax Engineering Co., Clinton, Iowa.

The speed reducer consists of a compact set of heat-treated, cut gears, inclosed in an oil tight housing which is bolted to the flywheel housing of the engine. The high-speed shaft and the low-speed shaft rotate in the same direction. The gears run in oil and are designed to operate with a minimum of noise. A twin disc clutch is incorporated to permit of starting independently of the load, the load being thrown on after the engine is in operation. The driven unit may be connected by flexible coupling or by belt to the power unit.

## New Arc Welding Equipment

An arc welder for use in production and repair welding of iron and steel parts, cast and malleable, has been placed on the market by the New Monarch Machine & Stamping Co., Des Moines, Iowa. This equipment uses alternating current and is self-cooled. Among the claims made for it are intense penetration, highly developed system of regulating the temperature of the arc, and simplicity. Cast iron is said to be welded with facility.

The welder is made up of a series of impedance coils, which are of annealed steel containing manganese. The coils are said to provide an even flow of current and are of sufficient resistance to give a strong and steady arc. There are 13 impedance coils, arranged around two steel bands. They are connected with power plugs arranged on the front of the sheet steel casing, as shown in the illustration, each plug giving service from a certain set of coils, either four or one, as desired by the operator.

*The Welder Uses Alternating Current and Is Self-Cooled. There are no moving parts*

There are no moving parts in the welder, and cooling devices are not employed. An electrode holder, which may be used on any length of cable up to 500 ft., is provided. A length of cable greater than 500 ft. would cause loss of voltage and would reduce the amperage required for the larger work. The weight of the equipment is 275 lb., and the space occupied is 3 cu. ft.

## American Institute of Steel Construction Now Represents 218 Plants

With an original membership of 50 steel fabricating companies, the American Institute of Steel Construction now represents 218 plants engaged in the fabrication and erection of structural steel in the United States and Canada. This membership produces more than 99 per cent of the total output of structural steel in the two countries, excluding the production of the plants controlled by rolling mills. The industry transacts a business of approximately $300,000,000 a year.

These facts were given by Charles F. Abbott, executive director of the institute, in an address delivered at Houston, Tex., to a group of architects, engineers, contractors and others engaged in building construction. In this address Mr. Abbott laid great stress on the accomplishment of one of the aims of the institute: the elimination of waste in estimating and bidding on building work. Progress is being made in this direction, but Mr. Abbott made the point that something approaching a uniform building code is necessary. More than 100 cities are now using the institute's standard specification, but there are many inconsistencies in building practice, as for example the city of Chicago specifies a live load of 50 lb. per sq. ft. for all floors of office buildings, while Philadelphia has a fixed load for such floors at 100 lb. per sq. ft., a divergence for which, according to Mr. Abbott, there seems to be no logical explanation.

Mr. Abbott also makes the point that, according to William Gompert, architect of the Board of Education of New York, a saving of $540,000 would have been effected had the institute's specification been applied to the public school buildings contracted for in 1924.

## Shipbuilders Form National Organization

Consolidation of all branches of shipbuilding into a closely knit organization nation-wide in scope has been effected by the Atlantic Coast Shipbuilders' Association, 1600 Walnut Street, Philadelphia, whose secretary is Clarence Samuel King. A national committee of shipbuilders and repairers has been formed with a member in every port in the United States. This organization will work for the protection and advancement of the shipbuilding industry.

An example of how the national committee will function is cited by Secretary King in the case of the plan put before the country recently to improve the maritime position of the nation. The Atlantic Coast Shipbuilders' Association began the movement and enlisted the support of virtually every shipyard in the United States. The result was the formation of a legislative policy which was submitted to Congress and which has been embodied in a bill known as the Overseas Trade Act sponsored in the United States Senate by Senator George Wharton Pepper of Pennsylvania. The bill, which now is before the Senate Committee on Commerce, provides for a rebate to ship owners of that portion of the initial cost of a ship represented by the tariff element. The proposed rebates are to be paid from a fund derived from profits of the Panama Canal and interest on loans from the Shipping Board's construction loan fund.

The personnel of the shipbuilders' national committee is as follows:

New England Section—S. W. Wakeman, vice-president and general manager Bethlehem Shipbuilding Corporation; S. W. K. Brooks, president S. W. K. Brooks Co.; Paul J. Bertelsen, general manager the Atlantic Works; William E. Rice, president Rice Brothers Corporation; E. A. Morse, president Noank Shipyard, Inc.; L. Y. Spear, president New London Ship & Engine Building Co.

New York Section—L. H. Korndorff, vice-president and general manager Federal Shipbuilding & Dry Dock Co.; John J. Amory, president Consolidated Shipbuilding Corporation; W. Parker Runyon, president Perth Amboy Dry Dock Co.; Henry B. Nevins, president and treasurer Henry B. Nevins Co.; E. H. Ewertz, general manager Moore plant Bethlehem Shipbuilding Corporation; F. P. Morse, president Morse Dry Dock & Repair Co.; C. Pliny Brigham, secretary and treasurer Greenport Basin Construction Co.; Charles Cooper, president Chelsea Ship Repair Co.; William A. Hall, president C. M. Lane Life Boat Co.; George Hutchinson, president Newburgh Shipyards, Inc.; J. A. Dwyer, vice-president and secretary R. Lenahan Co.; Foster L. Hawkins, manager Port Jefferson Shipyard.

Delaware River Section—H. Birchard Taylor, vice-president William Cramp & Sons' Ship & Engine Building Co.; A. W. Main, naval architect Pusey & Jones Co.; Clinton L. Bardo, vice-president American Brown Boveri Electric Corporation; Robert Haig, vice-president Sun Shipbuilding & Dry Dock Co.; W. W. Robinson, president Mathis Shipyard Co.; C. W. Weaver, general manager Harlan plant, Bethlehem Shipbuilding Corporation; John Baisley, president John Baisley Iron Works.

Baltimore Section—James C. Leonard, president Cambridge Mfg. Co.; J. Macy Willis, general manager Baltimore plant, Bethlehem Shipbuilding Corporation; Capt. J. A. Spilman, president Maryland Dry Dock Co.

Southern Section—Homer L. Ferguson, president and general manager Newport News Shipbuilding & Dry Dock Co.; Frank B. Hooper, vice-president Warwick Machine Co.; A. J. Dyer, president Nashville Bridge Co.; W. G. Larmour, general manager Old Dominion Marine Railway Corporation; O. A. Bloxom, president Southern Shipyard Corporation; George W. Roper, president and treasurer Norfolk Shipbuilding & Drydock Corporation; J. H. Curtis, president Gas Engine & Boat Corporation; H. R. Humphreys, president the Humphreys Railways, Inc.; W. W. Storm, vice-president and general manager Wilmington Iron Works; E. F. Hamme, Jr., Hamme Marine Railways Co.; C. V. Boykin, vice-president and general manager Charleston Dry Dock & Machine Co.; J. R. Massengale, president St. Louis & Tennessee River Packet Co.

South Atlantic and Gulf Section—James C. Merrill, vice-president and general manager Merrill-Stevens Dry Dock & Repair Co.; Ernest Kreher, president and general manager Tampa Shipbuilding & Engineering Co.; J. F. Taylor, president and general manager Warren Fish Co.; Warren Johnson, president and general manager Johnson Iron Works; Paul F. Jahncke, vice-president Jahncke Dry Docks, Inc.; I. H. Aiken, president and general manager, Aiken Tow Boat & Barge Co.; J. H. Langben, president Galveston Dry Dock & Construction Co.; David R. Dunlap, president Alabama Drydock & Shipbuilding Co.; John F. Prigge, vice-president Todd Shipbuilding & Drydock Co.; Thomas A. Johnson, president and general manager Bruce Dry Dock Co.

Pacific Coast Section—George A. Armes, president General Engineering & Dry Dock Co.; C. W. Wiley, chairman of the board Todd Dry Docks, Inc.; J. A. Moore, president Moore Dry Dock Co.; William Cornfoot, proprietor Albina Engine & Machine Works; James C. Craig, president Craig Shipbuilding Co.; L. E. Caverly, vice-president and general manager Los Angeles Shipbuilding & Drydock Corporation; J. K. Collins, president Hanlon Dry Dock & Shipbuilding Co.; J. J. Tynan, vice-president, Union plant Bethlehem Shipbuilding Corporation; A. F. Marion, vice-president Pacific Coast Engineering Co.

Great Lakes Section—A. G. Cuthbert, president A. G. Cuthbert Co.; A. G. Smith, president American Ship Building Co.; Benjamin L. Cowles, president Cowles-Matton Barge Canal Dry Dock, Inc.; H. J. Defoe, president Defoe Boat & Motor Works; E. M. Gregory, general manager Belle Island Boat & Engine Co.; Carl Hartman, president Green Bay Dry Dock Co.; G. A. Tomlinson, president Buffalo Dry Dock Co.; Arthur Lanzell, president Arthur Lanzell Co.

## Southern Machinery Exhibition Planned

The Textile Hall Corporation, Greenville, S. C., which has been sponsor for exhibitions of textile machinery, is planning for a Southern machinery exposition, to be held at Greenville probably in October, 1927. Reservations for space are now being solicited. No textile machinery would be shown at that time, but manufacturers of power and allied equipment are to be invited to exhibit.

Copper statistics covering all phases of the industry are contained in the 1926 edition of "Copper Share Statistics," compiled and revised by E. N. Skinner, mining engineer with Hayden, Stone & Co., New York, and published by the Copper Share Statistics Co., 120 Broadway, New York. Statistics relate to the principal features of the United States copper industry and include figures on production, consumption, stocks of metal, prices over a range of 75 years and other useful information in tabulated form.

E. Arthur Tutein, Inc., Boston, pig iron merchant, is now located at 10 Post Office Square.

## American Foundrymen Make New Records

According to records which were discussed and made public at the recent annual meeting of the board of directors of the American Foundrymen's Association in Chicago, the end of the fiscal year of the association, Dec. 31, 1926, shows a number of records broken. On Jan. 1, 1927, the book membership was 1754 with 500 new members elected up to that time, a gain of 28.5 per cent. The number resigned or dropped was 70, or 3.9 per cent, leaving a net gain for the year of 24.6 per cent; the present membership is 2184.

The members of the association operate 1066 gray iron, 608 non-ferrous, 220 steel and 148 malleable foundries or departments. It should be stated that many firms operate two or more classes of such foundries. Convention attendance records were also broken in 1926 with a registration at the Detroit meeting of 5732 men representing 2320 firms. There were 39 states represented and also five provinces of Canada and 14 overseas countries.

## Engineering Council Meeting

A plan to centralize in a single cabinet office all the functions of the Federal Government which affect public works and the public domain will come before the Assembly of the American Engineering Council for approval at the council's annual meeting, which will be held in Washington Jan. 13 and 14. Should the proposal be approved, a nationwide movement will be initiated to abolish the present form of the Department of the Interior and to establish a Department of Public Works and Domain.

A special meeting of the assembly has been called for the evening of Jan. 13 to hear the report of a nationwide study of safety and production in industry. Charles M. Schwab, chairman of the board of the Bethlehem Steel Corporation and president of the American Society of Mechanical Engineers, will be the chief speaker at the annual dinner of the council, to be held on the evening of Jan. 14 at the Mayflower Hotel.

## Compressed Gas Manufacturers to Meet

Several technical papers are included in the program of the Compressed Gas Manufacturers Association, in connection with the fourteenth annual meeting at the Hotel Commodore, New York, on Jan. 24. Two papers in the morning session are "Changes in Gas Cylinder Steels During Service," by K. G. Jobson of the Union Carbide & Carbon Research Laboratories, Long Island City, N. Y.; "Optical Methods of Inspecting Pressure Vessels," by Dr. I. C. Gardner, of the United States Bureau of Standards, Washington.

At the afternoon session F. A. Ernst, of the United States Fixed Nitrogen Laboratory, will read a paper on "Compressed Gas Technique." J. M. Arthur, of the Boyce Thompson Institute for Plant Research, will deliver an illustrated lecture, "Some Effects of Carbon Dioxide and Light on Plant Growth and Flowering." R. S. McBride, assistant editor *Chemical and Metallurgical Engineering*, New York, will tell of the progress in the compressed gas industry—"Converting Dreams to Dividends." A business session will follow the afternoon technical session, while the fourteenth annual dinner will be held in the evening.

### Extent of the Industry.

In the announcement of the meeting the association calls attention to the fact that compressed gases, marketed yearly in the United States, run up to a value of $55,000,000 to $65,000,000. For their distribution some 3,800,000 steel cylinders and 500 tank cars have been placed in service. A large percentage of the cylinders are seamless containers used with internal pressures running up to 2000 lb. per sq. in., or more. Through cooperation of industry, the carriers and the Government, these pressure vessels have been developed to a point where they represent an exceptionally safe and efficient form of container for transporting their contents.

## Automotive Engineers in Detroit

The Society of Automotive Engineers will hold its annual national convention in Detroit, from Jan. 25 to 28, inclusive, at the time of the Detroit automobile show. There will be ten technical sessions, and among the subjects to be discussed are: The use of X-Rays for revealing defects in castings and other metal parts, by G. L. Clark of the Massachusetts Institute of Technology; plating with chromium, by W. N. Phillips; training of employees at the General Motors Institute of Technology, by Albert Sobey.

## Predicts Large Building Program in 1927

The Copper and Brass Research Association, 25 Broadway, New York, which has completed a survey of building construction contemplated in 1927, predicts a total expenditure of nine billion dollars, pointing out that "building forecasts as a rule do not take cognizance of anything but new construction, but the other items figured in the survey have reached such staggering figures that they are almost of equal importance to those connected with the building industry." These other items referred to are repairs and maintenance and repair of fire and storm losses. "For years to come the construction industry will be one of the greatest in the country," the association predicts.

## Personnel Procedure to Be Discussed

A conference of personnel managers and college placement officers will be held under the auspices of the Personnel Research Federation at the Hotel Pennsylvania, New York, Jan. 20, 21 and 22. Successive sessions will be devoted to discussion of personnel procedure; mental hygiene; employment tests; placement of teachers; placing college graduates in business; and the personal interview. Inspection visits to institutions and offices in the New York district are being arranged.

The membership of the Personnel Research Federation, which was organized in 1921 through the influence of the Engineering Foundation and the National Research Council, includes 48 organizations and 83 individual members. W. V. Bingham, 40 West Fortieth Street, New York, is director.

## COMING MEETINGS

### January

**American Engineering Council.** Jan. 13 to 15. Annual meeting, Hotel Mayflower, Washington. L. W. Wallace, Washington, executive secretary.

**American Society for Steel Treating.** Jan. 20 and 21. Winter sectional meeting, Hotel Mayflower, Washington. W. H. Eisenman, 4600 Prospect Avenue, Cleveland, secretary.

**Personnel Research Federation.** Jan. 20, 21 and 22. Conference, Hotel Pennsylvania, New York. W. V. Bingham, 40 West Fortieth Street, New York, director.

**Compressed Gas Manufacturers' Association, Inc.** Jan. 24. Fourteenth annual meeting, Hotel Commodore, New York. John H. Luening, 120 West Forty-second Street, New York, secretary.

**Society of Automotive Engineers.** Jan. 25 to 28. Annual meeting, General Motors Building, Detroit. C. F. Clarkson, 29 West Thirty-ninth Street, New York, general manager.

## Year's Foundry Equipment Business Ahead of 1925

Sales in the first 11 months of 1926, reported by the Foundry Equipment Manufacturers' Association, aggregated $4,659,601, a gain of 9 per cent over the $4,246,927 reported by the same concerns in the first 11 months of 1925. No month of the year just passed equaled the high record of November, 1925, with $595,739. The current November was $454,536, or 24 per cent less. It was, however, the largest total since March. It was larger than any month in 1925, except November and March. Inasmuch as sales in 1925 showed a 25 per cent gain over 1924, the figures for 1926 are high.

Unfilled orders, Dec. 1, amounted to $570,608, a gain of 8 per cent over November and, with the exception of the corresponding date of 1925, the highest total in more than a year. On the basis of November shipments, which amounted to $405,345, the unfilled orders represent about six weeks' work.

## Record Year in Automobiles

Preliminary figures of the National Automobile Chamber of Commerce show total production in 1926 of 4,480,000 vehicles, of which 3,950,000 were passenger cars and 530,000 trucks. Closed cars at 2,926,000 were 74 per cent of the passenger car total. Tires to the number of 63,000,000 were produced, and exports amounted to 550,000 vehicles.

Wholesale values are given as $2,622,450,000 for passenger cars and $434,500,000 for trucks, a total of $3,056,950,000. To this should be added $775,000,000 for tires for replacement purposes and $600,000,000 for replacement parts and accessories. Wholesale prices figure out at an average of $664 per passenger car and $820 per truck. The average retail prices were $886 and $1,090 respectively, f.o.b. factory.

Motor vehicles registered in the United States are placed at 22,330,000, or 81 per cent of the world total of 27,500,000. Of the American total 19,520,000 were passenger cars and 2,810,000 trucks. Of the total, 4,852,000 were on farms. Of the total 1926 sales 64 per cent were on the installment plan, the amount of obligation outstanding being placed at $1,378,000,000, or more than half the wholesale value of all passenger cars produced in the year.

## New Peak in Car Loadings in 1926

Car loadings in 1926 are reported at 53,309,644, an increase of 4.1 per cent over the previous record of 51,224,152, established in 1925. For the first time the average week of the entire year exceeded 1,000,000. In 27 of the 52 weeks of the year the figure exceeded 1,000,000, culminating in a maximum of 1,216,432 cars in the week ended Oct. 30—the largest weekly figure ever recorded.

An editorial in *Railway Age* pointed out the fact that the 1926 business showed the first "old-fashioned" increase in freight business since 1920. This meant the first increase in that period comparable with the annual increases occurring before the war. It was not unusual in ante-bellum years of prosperity to have an increase of 15 to 20 billion net ton-miles in a year. In contrast, the total increase between 1920 and 1925, a period of five years, was less than 6,000,000,000. In the first nine months of 1926, however, net ton-miles amounted to 357,000,000,000, or more than 23,000,000,000 greater than in the first nine months of 1925, and 13,000,000,000 greater than in 1923, which made the highest record for the first nine months of any year previous to 1926.

### Better Use of Equipment

*Railway Age* points out that, although car loadings in each year since 1922 have exceeded those of 1920, the increase has been relatively more in the light loads than in the heavy loading traffic. From this it has resulted that the increase in tons carried one mile has been smaller proportionately than the increase in car loadings. Apparently 1926 has reversed this tendency and gone back to heavier loadings. Average loadings per car in the first nine months of 1926, at 27.1 tons, showed a slight gain over the 27 tons of 1925 and 26.9 tons of 1924. They still remain, however, well below the 29.3-ton average of 1920.

Car-miles per day, however, have averaged higher in 1926 than in preceding years, the first nine months showing 29.9 miles, compared with 28.3 miles in 1925, and as low as 22.4 miles in 1921. Average ton-miles per car day, therefore in 1926 (first nine months basis) amounted to about 810, compared with about 735 in 1920, 764 in 1925 and 776 in 1923—the highest figure, previous to 1926.

## Herbert Hoover Sees Favorable Outlook

In response to requests for a statement of conditions and prospects for 1927, Herbert Hoover, Secretary of Commerce, issued the following:

"No one will deny that 1926 has shown the highest total production and consumption of industrial commodities of any year in the history of the United States. Except in the textile industry and parts of the coal industry, it has been a year of high degree of employment, which has been accompanied by the highest peak in real wages, because wage income for the country as a whole has slightly increased and cost of living slightly decreased during the year. Manufacturing, the service industries, and commerce generally have continued to improve their methods, to reduce costs and to improve services. In aggregate, each industry appears to show substantial profits except the textile and some parts of the coal industry.

"While there has been a slackening in production and demand for several staple lines during the past few weeks, we enter the new year with no consequential overstock of manufactured goods. With the largest volume of construction during the past year ever known, there may prove to be some construction in advance of immediate needs, but slackening in this direction may be partially compensated by the assurance of a larger amount of public construction during the next year. Savings of the country have shown a steady increase, and there is ample cheap capital available.

"The lag of agricultural recovery has continued and has been accentuated by distressing crop failures in some localities. Cotton and some fruit crops beyond world demand have brought about prices below the cost of production of large areas of those commodities. There is a consequent lowered buying power in some agricultural sections.

"Taking the foreign field as a whole, it shows continued progress toward balance of budgets, reduction of floating debt, greater stability in currency, and somewhat diminished unemployment."

## Composition at Various Elevations in a Blast Furnace

An investigation of the gas composition, temperature, and pressure at a series of planes in a blast furnace making foundry iron in the southern district was recently completed by the United States Bureau of Mines. Samples of coke, metal, slag, limestone and stock were recovered from points between the tuyere plane and stock line. If complete and representative samples of stock could be obtained from various points across a series of planes between the stock line and tuyere level while the furnace is in operation, analyses of these samples would present a clear picture of most of the steps in the reduction process. Aside from giving the position of the zones of reduction, calcination and slag formation, the samples would be valuable in determining where the iron acquires its carbon, sulphur, phosphorus, manganese and silicon. Such an investigation was suggested by a number of operators who are interested in control of the composition of pig iron. The results are given in Technical Paper No. 397 by S. P. Kinney, metallurgist.

## Changes in Industrial Use of Electrical Machinery

Among the changes during 1926, reported by the General Electric Co. for their apparatus designed for industrial use, is the high-frequency furnace utilized commercially for the first time in melting ferrous metals. Electric welding has been applied to an increasing extent and for larger work in manufacturing processes. Electric heating was adopted during the year by some industries which previously had depended solely on fuel. There was a continuation of active development in electric refrigeration apparatus.

While previous record power ratings of water-wheel type generators were not exceeded in 1926, a large number of machines was constructed, both with horizontal and with vertical shafts. A notable feature in their mechanical design was a marked tendency to substitute steel plate construction for much of the heavy work heretofore utilizing castings. This new type of construction was applied also in building large synchronous condensers and synchronous converters.

[An example of this tendency at a somewhat earlier date than mentioned above was shown in the description on page 340 of our issue for Feb. 4 last, of the hydroelectric power plant, then recently installed for the Stanley Works, New Britain, Conn. In this case the plates used were about 1 in. thick, with all seams welded.]

## Large Gain in Locomotive Shipments

Shipments of railroad locomotives by manufacturers totaled 1750 units in 1926, compared with 1216 units in 1925, according to reports received by the Department of Commerce. December was the largest month of the year, with 185 locomotives shipped. No month during 1926 showed less than 120 units, while no month in 1925 reached that figure, the highest having been 118 in August and the lowest 76 in July.

Steam locomotives for domestic use made an increase of 80 per cent over 1925, the respective figures having been 755 and 1357. This gain was in sharp contrast to a loss of 43 per cent in export shipments of steam locomotives, which dropped from 277 to 159. Electric locomotives, which totaled only 184 in 1925, went up to 234, or 27 per cent more, in 1926. Both the domestic and the export deliveries shared in this increase, domestic shipments having been 177 in 1926 against 144 in 1925, while export shipments went up from 40 to 57.

Unfilled orders at the end of 1926 were much lower than was the average figure over the two years. Orders for 398 units were unfilled on Dec. 31, against 517 a month earlier and 708 one year earlier. Of the current list, 297 were steam for domestic use, 79 were steam for export (one-half of all the exports of the year just ended), 14 were electric for domestic use, and 8 electric for export. The electric total at 22 was much the lowest for any month in the two years. It compares with 95 at the end of 1925.

## Receiver Appointed for Thomas Furnace

Richard M. Marshall, Kerchner & Marshall, Pittsburgh, and vice-president of the Dunbar Corporation, Dunbar, Pa., was appointed receiver of the Thomas Furnace Co., Milwaukee, Jan. 4, by Judge Gustave Garz of the Circuit Court of Wisconsin. Mr. Marshall was ordered to post bond of $100,000, and was given authority to operate the plant and conduct all business of the company.

The receivership was the culmination of the company's inability to meet interest charges on the bonded indebtedness, amounting to approximately $843,000, and arrangements for the receivership were concluded on a basis satisfactory to both John M. Thomas, president Thomas Furnace Co., and the bondholders' protective committee. It is the plan of the bondholders and the receiver to place the plant in operation as soon as raw materials can be provided at the reopening of lake navigation.

## Awarded Sesqui-Centennial Prizes

The American Pulley Co., Philadelphia, was given the grand prize for its pressed steel reels, spools, beams and beam heads for wire and textile manufacturers at the recent Sesqui-Centennial Exposition at Philadelphia. The company also received other awards as follows: The Medal of Honor for its steel belt pulleys and steel shaft hangers, a gold medal for its pressed steel hand truck and a gold medal for its pressed steel car wheels for hand and inspection cars on railroads.

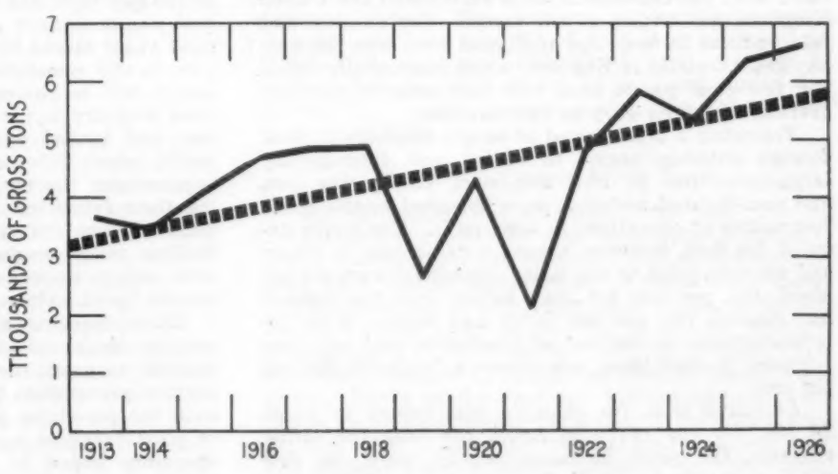
## To Form I. P. Morris Corporation

Stockholders of the William Cramp & Sons Ship & Engine Building Co., Philadelphia, at a special meeting, Dec. 29, gave approval to the plan providing for the formation of a company to be known as the I. P. Morris Corporation to take over the I. P. Morris department of the Cramp company. All of the stock of the new company is to be owned by the Cramp company. Approval was also given to the formation of a holding company to which shall be transferred all of the stock owned by the Cramp company in the De La Vergne Machine Co., the Pelton Water Wheel Co., the Federal Steel Foundry Co., and the new I. P. Morris Corporation when organized.

## Tin Deliveries Highest in History

DELIVERIES of tin in the United States during 1925 and 1926 have been higher than in any preceding year. Deliveries in 1923 and 1924 also were higher than in any year before 1923. The monthly average in 1925 was 6371 gross tons. This has advanced to an average of 6606 tons during the first nine months of 1926.

Working out a trend line mathematically, as shown by the dotted line on the diagram, we find that it entered 1913 at 3266 tons per month and entered 1927 at 5824 tons per month. This gain of more than 78 per cent in 14 years represents a much increased use of tin per capita, for population has advanced only 21 per cent in that period. Much of the gain in tin must be attributed to the enormous expansion of the tin container industry.



# Europe Had Year of Great Change

## International Cartels, Mergers in Germany, the British Coal Strike and Depreciation of the Franc Featured 1926

CHANGES barely short of epochal marked European iron and steel in 1926. As the French and Belgian franc entered into the final period of depreciation in the first half of the year, the foreign trade of the steel-producing countries of the world, including the United States, was seriously affected. To the French and Belgian mills this inflation brought an era of temporary prosperity, but to the other steel-exporting countries of the world it brought severe competition and unprofitable prices in foreign markets.

On May 1 world trade was further stirred by the calling of the British coal strike. For seven months, until the strike was officially ended on Nov. 30, British producers were largely eliminated from the export trade. To the United States came quite a little business in tin plate and some in sheets from British customers, and to Continental mills went a considerable tonnage of semi-finished steel used by British finishing mills in their efforts at partial operation.

Of great international importance was the final establishment in July of the European Rail Makers' Association to control the export sales of rails, and in September the formation of the International Raw Steel Cartel. With Germany, France, Belgium and Luxemburg as the nucleus, Austria, Hungary and Czechoslovakia joined in December, and the adherence of other steel-producing countries is anticipated.

Perhaps second only in importance to the formation of the steel cartel was the realinement of great industrial mergers in Germany. Early in the year, the Upper Silesian Steel Corporation was established by a series of consolidations, and in March the Vereinigte Stahlwerke A. G. was formed by a merger of six of the large steel producers of Germany. Later in the year, new mergers resulted in the Central German Steel Corporation. Further German combinations of manufacturers were under consideration as the year ended.

For the American steel industry, the year has been a period of unusually keen competition with European steel both in foreign markets and at home. Abroad, and in the United States, German mills have offered open-hearth steel and steel to American specifications, and French and Belgian quotations reached new low levels. With iron and steel shipments to American consumers increasing, there have been efforts to reduce the flow of foreign-made iron and steel, and in June it was charged by the United States Treasury Department that German sellers were violating the tariff by selling material on which a bounty had been paid to the producer. Following an investigation, however, action was postponed. In October, investigation of German steel imports as violating the anti-dumping act was begun by the Treasury Department, and as the year ended a report seemed imminent.

## *GREAT BRITAIN*—The Seven Months Coal Strike

LONDON, ENGLAND, Dec. 21.—The year just passed will doubtless be recorded as among the worst in the history of the British iron and steel industry. Until the end of April, business conditions were fair and manufacturers' order books were moderately well filled both with domestic and export business, although the ground lost in foreign trade during the depression of five years ago had been far from regained.

This comparatively satisfactory situation suddenly began to change, when, on May 1, the strike of coal miners was called and it was not until the end of November that the production of coal was again resumed in any material quantity. As a result of this curtailment of fuel supplies, blast furnaces were blown out and steel plants closed. When the strike was called there were 147 furnaces in blast throughout the United Kingdom, but within a few months this number had been reduced to five. An additional blow was the nine day general strike in England, which successfully closed the few steel plants that had been able to continue operation on their surplus fuel supplies.

Following a brief period of severe shortage of fuel, foreign supplies began to arrive and subsequently large quantities of iron and steel, chiefly pig iron and semi-finished material, were imported, enabling the resumption of operations in some mills. The heavy demand for fuel, however, caused a rapid rise in prices and whereas, prior to the strike, consumers were paying about 16s. per ton for coal, before long the market had reached 70s. per ton ($17) and more. With the large increase in the cost of production and only five furnaces in blast there was almost a famine in British pig iron.

Cleveland iron, for example, was quoted at about £3 10s. per ton ($17) in April, but with the strike effective, the price increased rapidly until the few small quantities available brought up to £6 per ton ($29). Steel prices were also affected, but the demand being limited the advances in the market were not so spectacular as in the case of pig iron.

### Foreign Fuel and Steel Used

Plants able to use foreign coal and steel, such as the tin plate mills and galvanizing mills, slowly resumed operation, so that a fair tonnage was produced despite the strike. As industry gradually adapted itself to the new conditions imposed by the strike, the tin plate mills reached an operation of about 40 per cent and the galvanized sheet mills produced as high as 60 per cent of capacity.

On Nov. 30 the coal strike was officially ended, and as the new year was approached production of domestic coal was once more nearing normal. The almost complete chaos caused by the shutting off of supplies, however, is still something of a difficulty and, at this writing, it will be several weeks still before the iron and steel industry approaches normal again. Most mills are well booked with future business, as the shipyards, when it became apparent the coal strike was approaching the end, began to issue inquiries covering their future requirements and an appreciable tonnage of new orders was placed with various mills. Rolling mills producing shipbuilding material now have many weeks, and in a few instances several months, work before them.

While there is a general desire among iron and steel producers to resume full operation at the earliest possible moment, the price of coal is still high, with current prices close to 30s. per ton ($7.30), compared with the pre-strike price of 16s. per ton. A number of blast furnaces have resumed and by the new year operators hoped to have 10 Cleveland furnaces in blast with smaller numbers in other districts being

blown in. Many of the smaller steel plants are beginning to operate with large accumulations of orders to be filled, including, in some cases, tonnage placed prior to the coal strike. The question of price on some of the old contracts may cause complications. There seems little doubt, however, that, given a period free from labor and other difficulties, the coming year will witness a substantial revival of activity in the iron and steel industry.

Developments on the Continent during the past year have been watched with keen interest, but apart from the European Rail Makers' Association, British mills show little inclination to merge with foreign industrialists. The formation of the International Steel Cartel has been the principal feature of European activity during the year and considerable interest has centered on its activities, particularly the regulation of output, which is expected to stabilize prices. The coal strike in England, however, produced an abnormal situation, so that no opportunity has been afforded as yet to judge of the effect of the cartel's operation.

# *GERMANY*—Mergers and Syndicates

BERLIN, GERMANY, Dec. 20. — The past year has marked a general recovery of the iron and steel industry, featured by a series of large consolidations. Production will not equal 1925, but whereas the highest rate of output then was reached in March, after which depression set in, the second half of 1926 showed a rapid improvement in each month's output. There were many factors favorable to this improvement, chief among them the British coal strike. In addition, the mergers of various producers into large corporations and the attendant reduction of costs and finally the establishment of the International Steel Cartel, all contributed to the prosperity of German industry in the latter half of the year.

From January to June market conditions changed but little and the German Raw Steel Syndicate retained unchanged its control of steel output at 65 per cent of capacity. In July, however, improvement began to appear and the quota of the steel syndicate members was increased to 67.50 per cent, in August to 70 per cent and in November and December it stood at 80 per cent of capacity.

In this second half of the year actual production exceeded the quota, for the British strike had caused increased pressure for semi-finished materials and rolled products, such as bars, shapes, sheets and wire. The pig iron market also showed improvement, despite the keen competition of French and Belgian producers, who became considerably less active as competitors toward the end of the year, when the effect of stabilization of the franc and the control by the International Steel Cartel began to be felt.

Throughout the year the steel syndicate continued its system of paying "bounties" or "rebates" to domestic manufacturers on materials purchased by them for conversion into export products. Maintenance of this system continued despite the claim of the United States that it was a violation of the American tariff act. Following action taken by the United States against imports of German steel, a German-American commission of investigation was formed to determine the facts, and action by the United States was indefinitely postponed. As the amount of these rebates is the difference between the German domestic price and the lower "world-market" prices, which resulted largely from depreciation of the franc, stabilization in France and Belgium later in the year caused the "world-market" price level to rise and the rebates were considerably diminished, although still in effect.

### Iron and Steel Output Lower

A comparison of the production of iron and steel in the first ten months of 1926 with the output in the same period of 1925 shows a slightly lower level. Pig iron output this year totaled 7,595,430 metric tons, compared with 8,699,335 tons in 1925. There was an average of 83 furnaces in blast throughout 1925 and in October of this year there were 97 in blast in Germany. Output of iron per furnace averaged higher this year than ever before. In 1924 the daily rate of output per day of 24-hr. was 43,748 metric tons, in December, 1925, it had risen to 47,820 tons, and in October of this year it averaged 52,135 tons. As a result of improvement in operation, the volume of labor required per unit of production throughout the industry declined during the year.

Output of steel also shows a decline this year, with 9,779,567 metric tons for the first ten months, compared with 10,556,374 tons in 1925. Of rolled products, 8,194,174 tons was produced this year and 8,853,175 in the first ten months of 1925.

The high tariff served to protect the domestic market from low priced importations of French and Belgian material during the period of currency inflation in those countries, and the rebate system enabled German exporters to compete in foreign markets despite the low level of prices. In December the Pig Iron Syndicate was established, including in its membership all domestic furnaces. When the syndicate was reestablished for a term of five years in 1925 several producers had remained outside.

### Price Changes Chiefly in Export

The domestic price structure fluctuated but little during the year, but foreign or "world-market" quotations covered a rather wide range. Steel bars, in the domestic market, for example, were quoted at 134.50 m. per ton in December, 1925, and at 134 m. per ton in December, 1926. Heavy sheets brought 149.25 m. per ton in December of last year and 148.90 m. per ton in December of this year. Billets registered a greater decline with the quotation at 119.25 m. per ton in December, 1925, and 112.50 m. per ton in December of this year. Structural shapes, however, show only a slight change with the price at 131.25 m. in December of last year and 131 m. in December of this year.

World market prices, in some instances, covered a wide range. Steel ingots, which in the German domestic market were quoted at 104.25 m. in December, 1925, and 100 m. in December of this year, advanced between July and December, 1926, about 19 m. per ton, and bars in the same period increased 24.50 m. per ton. Domestic pig iron prices were substantially the same in December of this year as in December, 1925.

Foreign trade in iron and steel was highly satisfactory, with average monthly exports for the nine months of the year of 432,200 tons and imports at only about 92,300 metric tons per month. This compares most favorably with 1925, when exports averaged only 295,700 tons and imports were about 120,170 tons per month. Exports of miscellaneous iron and steel products increased this year, but exports of tools declined, despite the increase in machinery sales. Average monthly exports of pig iron advanced to 25,000 tons, compared with 16,000 tons a month in 1925, and the average exports of bars and shapes was 96,000 tons a month, compared with about 50,000 tons a month in 1925.

### Mergers a Feature of the Year

The outstanding consolidation of the year was the formation by merger of the Vereinigte Stahlwerke A. G. (the United Steel Works). This combination of steel mills has a capital stock of 800,000,000 marks and includes the former Rhein-Elbe Union, consisting of the Gelsenkirchen Bergwerks A. G., the Deutsch-Luxemburg A. G., Bochum Cast Steel Co., August Thyssen A. G., Phoenix A. G. and the Rhenish Steel Corporation. Later in the year the Central German Steel Corporation was formed, including in its subsidiaries the steel mills of the Linke-Hofmann-Lauchhammer Co. and several smaller works formerly in the United

Steel Works. This new corporation is partly controlled by the United Steel Works. Early in the year the Upper Silesian Steel Corporation was formed and later in the year the United Steel Works obtained indirect control through an interlocking directorate.

During the year many smaller mergers were made or negotiations were begun for the formation of small corporations. Steps were taken in the latter part of the year toward the consolidation of railroad car builders, and a merger of locomotive builders is under consideration as well as a large consolidation among electrical manufacturers.

### New Year Approached with Optimism

Based on the rapid progress toward improvement in production during the latter half of 1926 and the realization of improvements in methods, the German steel mills, with orders booked for several months, partly as a result of the British coal strike, are looking to the new year as a period of general prosperity.

# *FRANCE*—Depreciated Currency and Increased Trade

PARIS, FRANCE, Dec. 21.—The history of the French iron and steel business in 1926 is largely written in the record of exchange fluctuations. During the first half of the year, France was a keen competitor for foreign business, booked at continually declining prices, as the franc reached lower levels in international exchange, until in July the low point of 243 fr. to £1 was touched. Buying, toward the end of the franc decline, began to develop into a process of translating currency of questionable value into material, such as iron and steel, that had, regardless of market fluctuation, a fairly stable value.

As the year entered into the second half, determined efforts toward stabilization of the franc began to produce results, and any rapid descent of the franc in the direction taken by the German mark a few years before was stayed, and a stable currency began to appear. Stabilization brought a certain degree of business depression, and the iron and steel industries began to suffer from curtailed business. Buyers, who had earlier in the year built up sizable stocks of material as the best substitute for a depreciating currency, began to consume material on hand and were temporarily out of the market. Prices declined, but not in proportion to the rise in value of the franc, leaving the industry with a high market level, both in domestic and export business, that seriously curtailed the large business built up artificially during the earlier part of the year.

As the year closes costs of production are high and lower market prices are inevitable, with buyers, both domestic and foreign, refraining from placing business in the present market. Concessions in price are becoming more and more common, and with costs still at a high level, profits are seriously diminished.

### International Syndicates Formed

Two outstanding international business agreements were made during the year. The European Rail Makers' Association, previously negotiated, was signed by the participating countries, and in September the International Steel Cartel was formed. Prior to formation of the cartel, efforts to maintain export prices were made, but without success, and the cartel was finally entered upon as the only method of reducing the serious competition among various European producers of iron and steel. The agreement among producers of wire rods in France, Belgium and Germany has been maintained with more or less success during the year and served as the foundation for an agreement among manufacturers of wire and nails.

Only one recognized comptoir or association of producers is actively functioning in France. The Office de Statistique des Produits Metallurgique (O. S. P. M.) continues the determination each month of the total tonnage of pig iron that blast furnaces must place at the disposal of foundries, and simultaneously prices are established for the month. In the export field there is a loose agreement among French, Belgian and Luxemburg producers of phosphoric pig iron governing the sales price of phosphoric iron in foreign markets.

### Large Year for Export Trade

Exports of iron and steel in the first ten months of 1926, excluding scrap, which was under government control for export during the greater part of the year, totaled 3,296,737 metric tons compared with 3,048,572 metric tons in the same period of 1925, not including scrap exports. Importation of iron, steel and alloys was also larger in 1926 than in 1925. During the first ten months 177,724 tons was imported, compared with 173,760 tons in the ten months of 1925. More ferroalloys and tool steels were imported this year as a result of increased operation of machinery manufacturers.

Pig iron importation, however, declined and smaller tonnages of wire rods, hoops, plates, sheets, wire and structural material were purchased in other countries. Imports of semi-finished material and bars, however, advanced from 24,481 tons in the first ten months of 1925 to 50,428 tons in 1926, while the exports of these products, despite the heavier demand caused by the British strike, totaled 1,612,495 tons in ten months, compared with 1,639,241 tons in 1925.

Imports of tin plate increased from 13,542 to 18,694 tons in 1926, as a result of heavier demands from the canning industry developing along the seacoasts. This increase was necessary despite a higher output, for exports totaled 15,787 tons in the first ten months of this year, compared with 9806 tons exported in 1925. More rails were brought in this year, but there was a considerable increase in the exports of rails with 271,421 metric tons shipped out this year, compared with 189,500 tons in the first ten months of 1925.

Structural steel imports declined to about 759 tons this year, but exports totaled 167,019 tons in contrast with only 105,499 tons in 1925. There was an increase in the purchases of tubes in foreign countries and a decrease in exportation of tubes. Imports for the first ten months of 1926 reached a total of 7322 metric tons in comparison to 7077 tons in 1925, while exports dropped to 52,555 metric tons this year compared with 57,551 tons in the first ten months of 1925.

The United States received a larger share of French exports in 1926 than in the previous year. During the first ten months of this year 22,493 metric tons of pig iron was shipped to the United States, compared with only 2968 tons in 1925. Shipments to the United States of semi-finished material also showed a large increase. A total of 31,782 tons of semi-finished steel and rolled products was shipped in the first ten months of this year, compared with 8127 tons last year. Rail exports to the United States declined as a result of the regulation exercised by the European Rail Makers' Association, only 3497 tons being shipped this year compared with 4849 in 1925. Castings exports to the United States, however, were larger with 27,991 tons this year and only 19,416 tons in the first ten months of 1925.

### More Ore and Pig Iron Production

During the first nine months of this year a total of 3,181,000 tons of phosphoric iron ore was mined, compared with 2,980,000 tons in the same period of 1925, and including the Thionville district (prior to the war, German) the 1913 output was 3,582,000 tons. Insufficient labor has been a considerable factor in limiting the current output of iron ore. Prior to the war workers at the mines were principally Italian, but since the war few have returned and their places have been taken by Polish and Czechoslovakian labor, which is not yet sufficiently experienced in mining Lorraine ore. Were it not for the limitation on production set by this situation in labor supply, larger exports of ore to Belgium and Germany could probably have been made. Stocks of ore on hand are not large, and although there was a total of about 2,000,000 tons above ground in January and February, at the end of August the available supply for prompt shipment

had declined to 1,870,000 tons and the current supply is estimated as still smaller.

Of the 217 blast furnaces in France, 154 were in blast Nov. 1. During the first ten months of 1926 pig iron production totaled 7,776,000 tons, compared with 6,984,000 tons in the same period of 1925, an increase of 792,000 tons this year. This increase in output was largely in basic iron with a slight advance in the production of foundry grade. Bessemer and special grades of iron registered a smaller output.

With wages continuing at a high level and the price of fuel advancing, in addition to other costs of production, producers look forward to the coming year as a period of restricted output and little or no profit, for it has become evident in the past few months, since the franc has approached a measure of stability, that a lower price level is inevitable. There is still uncertainty as to the level at which the Government may intend stabilizing the franc, but with this known, prices must of necessity be revised to the new value. Until this point of stabilization has been reached, business will probably be small and prices irregular.

## JAPAN BUYS PIPE

### Two Oil Companies Buy Tin Plate—American Importers Quiet

NEW YORK, Jan. 11.—Export and import of steel is quiet with only a moderate volume of inquiry and very little actual purchasing. Importers of Continental material report only a few small lot inquiries, although there is evidently considerable business in view from jobbers of steel in this district. German material is quoted on a basis of 1.90c. per lb. for plain steel bars and French and Belgian steel is offered at 1.80c. to 1.90c. per lb., c.i.f. duty paid, depending upon the size of the inquiry. No action has been taken under the Anti-Dumping Act but importers are still receiving notices with requests for further information on certain shipments of steel from Germany.

In the field of export, a few small inquiries are reported from Shanghai merchants for tin plate, but the political situation in China is still an obstacle to any increase of business. Of the recent inquiries from Japan, pipe tonnages were a prominent feature. The Imperial Government Railways placed 134,000 ft. of black gas pipe of British specifications with a large Japanese trading company; the Toho Gas Co. awarded 130,000 ft. of gas pipe to Okaya & Co. of Osaka, pipe dealers, who are members of the Japanese Pipe Syndicate, and the Tokio Gas Co. closed on 35,000 ft. of gas pipe with the Nippon Kokan Kaisha, a Japanese manufacturer.

#### Rails and Tin Plate for Japan

Of the railroad business that has been in the market from Japanese municipalities, Nagoya municipality awarded one mile of 93-lb. and one mile of 108-lb. grooved rails to a large Japanese trading company for execution by an American mill; Tokio municipality placed 1½ miles of 91-lb. girder rails with another prominent Japanese export house for American material, and Osaka municipality awarded three miles of 60-lb. high T-rails on the low bid of a German maker. The German price is reported to have been between 10 and 12 per cent lower than the American bid.

The tin plate for the Nippon Oil Co. in Japan, about 57,000 base boxes, is understood to have been distributed equally among Mitsui & Co., Mitsubishi Shoji Kaisha and Iwai & Co., American tin plate to be furnished. About 14,000 boxes of tin plate for the Kioto Oil Co. in Japan was divided between Mitsui & Co. and Suzuki & Co., who have placed the business with mills in the United States. While the market on export tin plate for Japan is generally understood to be about $5.70 to $5.75 per base box, c.i.f., the recent awards are reported to have been at figures more profitable for the buyers.

A few inquiries from Japan for light gage black sheets have appeared recently but no business of importance has been booked. The current quotations of American mills is still $82 to $83 per ton, c.i.f. Japan. Reports of British offers of light gage sheets would seem to indicate that these prices are low, £17 10s. per ton, c.i.f. Japan, or about $84.85 per ton, being the British offer.

#### Italian Duties Increased

Effective Dec. 19, the Italian Government has advanced duties on a number of commodities, including iron and steel products, furniture of certain kinds, forage cutters, hay tedders and rakes. Hay tedders and rakes were formerly on the free list and now take a duty of 27 gold lire per 100 kg. Steel furniture, affected by the increase, was formerly dutiable at 38.40 to 112 gold lire and takes a new duty of 48 to 140 gold lire.

## Believes British Must Have Voice in Steel Cartel for Self-Protection

LONDON, ENGLAND, Dec. 31.—At the annual general meeting of Dorman, Long & Co., held recently, the managing director, Arthur Dorman, made some interesting observations upon the attitude of British steel makers toward the International Steel Cartel. He was of the opinion that one of the chief reasons for the adverse trade conditions during the past few years was the lack of confidence created by the ever-changing level of prices and that it was possible that some agreement with continental makers might bring about the stability, which is so necessary for the undertaking of new enterprises.

He did not consider that it was by any means certain that European countries would be content in the future merely to sell Britain cheap semi-finished material in large quantities for fabrication. In all probability their intention would be to develop further their finished trades, which would affect the United Kingdom even more seriously than in the past. If this view were correct, he felt, it was to the interest of all concerned that Britain should have some voice in the general policy of the European steel agreement. Conversations had taken place to discuss a possible basis for participation, he said, but British steel makers had not yet come to any decision.

## German Rail Manufacturers Join European Pool

WASHINGTON, Jan. 4.—Accepting the terms of preferential treatment insisted upon by Great Britain for her colonies, German rail manufacturers have joined the European Rail Manufacturers' Association, according to a cablegram received by the Department of Commerce from Commercial Attaché Chester Lloyd Jones, Paris. The Czechoslovak producers also signed the agreement at the same meeting, obtaining a 4 per cent basis of participation. This brings the participation basis total up to 104 per cent, the cable says, and leaves the percentages accorded the earlier signatories the same as before this addition to their number. Rail prices have not been changed as yet as a result of this action, it is pointed out. It is also reported that an English commission is studying the possibility of adherence to the European Steel Entente.

The cable says that the export quota of 1,000,000 tons, which has been determined upon as the basis for the rail association is reported to include the United States' share in the British quota. The quota of the association will be increased to 1,040,000 tons by reason of the 4 per cent awarded to Czechoslovakia. It is understood that the present bases of participation, with tonnage of exports in 1925 in parenthesis, are as follows: Belgium and Luxemburg, 11 and 7 per cent, respectively (a total of 168,332 gross tons); France, 19.5 per cent (237,002); Germany, 19.5 per cent (288,272); United Kingdom, 43 per cent (217,196.)

# British Willing to Join Cartel

## Propose 12,000,000 Ton Quota and Cartel Offers 9,000,000 Tons—World Needs Believed Unsatisfied During British Strike

(*By Cable*)

LONDON, ENGLAND, Jan. 10.

PIG iron output is increasing with 38 furnaces in blast in the Northeast, 12 on the northwest coast and 14 in Scotland, a total of more than 70 estimated for the entire country. Supplies of iron, however, are still short, hematite being particularly scarce, as production is going largely to connected steel works and little iron in the open market seems probable before February. Foreign ore demand is improving and sellers are inclined to advance quotations.

Steel prices are firm with most mills well booked and a moderate demand for forward delivery but makers not keen sellers.

Tin plate is dull with consumers awaiting greater stability of prices. More mills have resumed, but the scarcity of British semi-finished steel is hindering rapid expansion. Galvanized sheets are quiet on poor demand and black sheets continue dull.

British steel interests, according to report, will attend the February meeting of the International Raw Steel Cartel, prepared to join in principle on a quota of 12,000,000 tons. The steel cartel's proposed quota for the British is understood to be 9,000,000 tons.

Continental markets are slack and mills, mostly French and Belgian, are soliciting business at concessions in prices. British users are pressing continental mills for deliveries on existing contracts and the congestion at Antwerp is less acute.

## GERMAN HOME TRADE GOOD

### British Strike Expected to Provide Good Business for Some Time

BERLIN, GERMANY, Dec. 17.—Domestic business has thus far been but little affected by cessation of the British coal strike. Coal production continues at about 25 per cent above the pre-strike output and domestic demand for iron and steel is fairly active. To offset the weakening of Continental prices, which resulted from a currency situation in France and Belgium, the steel cartel, early in December reduced the quotas of its members. This reduction of 1,500,000 tons a year, brings the total output of all the original members to a rate of 27,787,000 tons a year, effective through the first quarter.

In general the Continental situation is considered favorable to good business in the immediate future. It is estimated that for the duration of the British strike, British pig iron output was reduced by 3,500,000 tons and steel production by 4,500,000 tons. To offset this reduction, Continental producers increased their total production of pig iron by 2,000,000 tons and steel output by 2,500,000 tons. This would apparently indicate that, independently of normal market fluctuations, a deficit in iron and steel supply exists. In consequence, German producers expect several months of good business and are continuing to produce in excess of their quota in the cartel. This entails the payment of a considerable sum in fines for excess production but, it is believed that other groups in the cartel will be fined and as all fines are ultimately redistributed, the total loss should not be large. In the meantime, British prices are considerably above the Continental level and, despite resumption of operations in England, the importation of foreign steel by British finishing mills, is expected to continue for some time.

Czechoslovakia, Austria and Hungary have finally joined the European Rail Makers' Association and the International Steel Cartel with their participation in the latter fixed on the basis of a total output of 2,000,000 tons a year for the three, of which Czechoslovakia and Hungary receive 1,500,000 tons and Austria the remainder. Poland continues an outsider, being unwilling to join on the basis of its first quarter of 1926 output, which was low.

Formation of the German Railroad Car Construction Syndicate has been completed and the German

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**British and Continental European prices per gross ton, except where otherwise stated, f.o.b. makers' works, with American equivalent figured at $4.85 per £ as follows:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Durham coke, f.o.b. | £1 | 5s. | | | | $6.06 | |
| Bilbao Rubio ore† | 1 | 2 | to £1 | 3s. | | 5.33 to | $5.57 |
| Cleveland No. 1 fdy. (nom.) | 4 | 10 | | | | 21.82* | |
| Cleveland No. 3 fdy. | 4 | 5 | | | | 20.61* | |
| Cleveland No. 4 fdy. | 4 | 4 | | | | 20.36* | |
| Cleveland No. 4 forge | 4 | 3½ | | | | 20.12* | |
| Cleveland basic (nom.) | 3 | 15 | to | 3 | 15½ | 18.18 to | 18.30 |
| East Coast mixed | 4 | 10 | | | | 21.82 | |
| East Coast hematite | 4 | 8 | to | 4 | 12½ | 21.34 to | 22.43 |
| Rails, 60 lb. and up | 7 | 15 | to | 8 | 0 | 37.58 to | 38.80 |
| Billets | 7 | 10 | to | 8 | 15 | 36.37 to | 42.43 |
| Ferromanganese | 16 | 0 | | | | 77.60 | |
| Ferromanganese (export) | 15 | 15 | | | | 76.38 | |
| Sheet and tin plate bars, Welsh | 6 | 15 | to | 7 | 10 | 32.73 to | 36.37 |
| Tin plate, base box | 1 | 0¾ | to | 1 | 1 | 5.03 to | 5.09 |
| Black sheets, Japanese specifications | 15 | 0 | to | 15 | 10 | 72.75 to | 75.17 |
| | | | | | | C. per Lb. | |
| Ship plates | 8 | 10 | | | | 1.84 | |
| Boiler plates | 10 | 15 | to | 11 | 5 | 2.32 to | 2.43 |
| Tees | 8 | 15 | to | 9 | 5 | 1.89 to | 2.00 |
| Channels | 8 | 0 | to | 8 | 10 | 1.73 to | 1.84 |
| Beams | 7 | 15 | to | 8 | 5 | 1.67 to | 1.78 |
| Round bars, ¾ to 3 in. | 8 | 5 | to | 8 | 15 | 1.79 to | 1.89 |
| Steel hoops | 10 | 10 | and | 11 | 0 | 2.28 and | 2.39 |
| Black sheets, 24 gage | 12 | 10 | to | 12 | 15 | 2.70 to | 2.76 |
| Galv. sheets, 24 gage | 16 | 0 | to | 16 | 5 | 3.46 to | 3.51 |
| Cold rolled steel strip, 20 gage, nom. | 18 | 0 | | | | 3.91 | |

*Export price, 6d. (12c.) per ton higher.

†Ex-ship, Tees, nominal.

### Continental Prices, All F.O.B. Channel Ports

(Per Metric Ton)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Foundry pig iron: (a) | | | | | | | |
| Belgium | £3 | 17½s. | to £4 | 0s. | | $18.66 to | $19.40 |
| France | 3 | 17½ | to 4 | 0 | | 18.66 to | 19.40 |
| Luxemburg | 3 | 17½ | to 4 | 0 | | 18.66 to | 19.40 |
| Basic pig iron: | | | | | | | |
| Belgium | 3 | 12 | to | 3 | 14½ | 17.45 to | 18.06 |
| France | 3 | 12 | to | 3 | 14½ | 17.45 to | 18.06 |
| Luxemburg | 3 | 12 | to | 3 | 14½ | 17.45 to | 18.06 |
| Coke | 0 | 18 | | | | 4.37 | |
| Billets: | | | | | | | |
| Belgium | 4 | 19 | to | 5 | 2 | 24.00 to | 24.73 |
| France | 4 | 19 | to | 5 | 2 | 24.00 to | 24.73 |
| Merchant bars: | | | | | | C. per Lb. | |
| Belgium | 5 | 7½ | to | 5 | 10 | 1.18 to | 1.21 |
| Luxemburg | 5 | 7½ | to | 5 | 10 | 1.18 to | 1.21 |
| France | 5 | 7½ | to | 5 | 10 | 1.18 to | 1.21 |
| Joists (beams): | | | | | | | |
| Belgium | 5 | 8 | to | 5 | 10 | 1.18 to | 1.21 |
| Luxemburg | 5 | 8 | to | 5 | 10 | 1.18 to | 1.21 |
| France | 5 | 8 | to | 5 | 10 | 1.18 to | 1.21 |
| Angles: | | | | | | | |
| Belgium | 5 | 10 | | | | 1.21 | |
| ⅛-in. plates: | | | | | | | |
| Belgium (nominal) | 7 | 0 | to | 7 | 2½ | 1.54 to | 1.56 |
| Germany (nominal) | 7 | 0 | to | 7 | 2½ | 1.54 to | 1.56 |
| ⅜-in. ship plates: | | | | | | | |
| Belgium | 6 | 5 | to | 6 | 10 | 1.37 to | 1.43 |
| Luxemburg | 6 | 5 | to | 6 | 10 | 1.37 to | 1.43 |
| Sheets, heavy: | | | | | | | |
| Belgium | 6 | 3 | to | 6 | 4 | 1.33 to | 1.34 |
| Germany | 6 | 3 | to | 6 | 4 | 1.33 to | 1.34 |

(a) Nominal.

Railroads Corporation is expected to sign an agreement with the syndicate covering future orders. Members of the syndicate are practically controlled as to prices. Under the terms of the agreement with the railroad corporation, the syndicate will not charge private customers less than the prices paid by the corporation and the corporation in return agrees to give practically all its business to the syndicate.

Merger of the Gelsenkirchen Bergwerks, A. G., Deutsch-Luxemburg Bergswerks und Hütten A. G. and the Bochum Cast Steel Co. has been agreed to by the stockholders. The new Gelsenkirchen Corporation will be the third largest corporation in Germany and is controlled by the United Steel Works.

Progress in the formation of a shipbuilding corporation is evident in the merger of the Hamburg Vulkan, Weser Tecklenborg and the A. G. Weser Co. Engineering plants report a considerable improvement in business, principally in domestic markets.

The outlook for electrical equipment manufacturers is good. The Berlin Stadtbahn is to be electrified next year and a number of orders have been received from Russia. To increase Russian business, the government has increased its guarantees on export credit insurance by 175,000,000 marks.

## FRENCH MILLS SEEK ORDERS

### Consumers Await Lower Prices—Mills Consider Five-Day Week—Small Exports

PARIS, FRANCE, Dec. 17.—Demand is at a low level, with consumers' stocks evidently still large and important business delayed as a result of the uncertain future of the franc. When actual stabilization of the currency is complete, mills will be able to revise their prices to a fair basis and consumers will no longer delay buying in expectation of lower prices, but this condition is apparently still in the future. Export business is small with export sellers demanding lower prices to compete with German, Belgian and Luxemburg mills. The reduction of quotas for the first quarter, by the International Steel Cartel, is viewed with satisfaction among French mills, as it is hoped that with lower output slightly greater firmness of prices may develop. Export business, at the present price level, is not particularly profitable. Merchant steel bars, for instance, are quoted at £5 10s. per ton, f.o.b. Antwerp, or about 670 fr., while the domestic price is 820 to 840 fr. per ton.

**Coke.**—A contract has finally been made with Germany for the delivery of coke during the year. Under this agreement, ending in February, 1928, 300,000 tons a month will be delivered. The coke will be sold at a minimum of 19 marks and a maximum of 21 marks, at ovens in the Ruhr. With the gold mark at 6 fr., the price is 126 fr. ($4.98) per ton, to which must be added cost of transportation in Germany and France.

**Pig Iron.**—A total of 30,000 tons of foundry iron has been fixed for the requirements of foundries in January, with 20,000 tons the tentative figure for February and 10,000 tons for March. Hematite iron has been reduced by 50 to 60 fr. per ton, depending upon the delivery, and phosphoric iron producers have reduced prices for January by about 10 per cent. The January price for No. 3, smooth skin, foundry is 540 to 600 fr. ($21.33 to $23.70) per ton. Export prices continue fairly firm, but ending of the British strike is expected to have a depressing effect before long. The foundry iron price is being maintained at £4 5s. to £4 6s. ($20.61 to $20.85) per ton, f.o.b. Antwerp.

**Semi-Finished Material.**—There is a serious decline in prices and billets are down to the former basis of 700 fr. ($27.65) per ton in the domestic market. Although supplies available for export are not large, the price is weak, with billets back to the level prevailing prior to the British strike, £5 3s. 6d. to £5 6s. ($25.10 to $25.70) per ton and blooms at £4 12s. 6d. to £4 15s. ($22.42 to $23.03) per ton, f.o.b. Antwerp.

**Finished Material.**—Purchasing continues small and mills, in need of tonnage, are in many instances offering decided reductions in price. Lack of orders has become so serious that some producers are considering going to the five-day week, eliminating all work on Saturday. For export, bars and beams range from £5 9s. to £5 12s. per ton (1.20c to 1.22c. per lb.), f.o.b. Antwerp. The export price on wire rods is quite firm at £6 2s. 6d. ($29.70) per ton, despite the general lack of business, but in the domestic market rods are weak at 950 fr. ($37.52) per ton, Saar mills often undercutting this price. Sheet prices are also developing weakness. The export price is generally unchanged, largely because of the absence of any sizable lots, which would undoubtedly bring out concessions. Heavy gages for export are quoted at £6 7s. 6d. (1.40c. per lb.) and medium gages at about £6 16s. 6d. per ton (1.50c. per lb.), f.o.b. Antwerp.

## BELGIAN PRICES DECLINE

### Buyers Await Result of British Resumption—French Export Prices Lower

ANTWERP, BELGIUM, Dec. 15.—There is a general softness of prices and the downward tendency of the market would probably be much more definite were it not for the lack of any large transactions. The present holiday quiet is expected to continue until after the middle of January, when there will probably be some increase in buying, but at even lower than present prices. As an evidence of the price ideas of buyers, it is noteworthy that export sellers are quoting material at lower than the mills are willing to accept, evidently in the belief that before actual placing of business for execution, the market will have reached a lower level. In the domestic market, only immediate requirements are being covered, as consumers await the result of resumption of activity in Britain and the expected decline in the price of coke.

**Pig Iron.**—The domestic market on No. 3 phosphoric foundry iron has been established by the syndicate at 725 fr. per metric ton, f.o.b. furnace, about $20.20 per ton, with the export quotation at £4 5s. per ton, $20.85 per ton, f.o.b. Antwerp. These official quotations, however, are developing but little business, domestic consumers preferring to await the expected lower prices, meanwhile consuming iron contracted for, prior to the recent advance, while exporters expect lower foreign prices when British furnaces are again offering export iron. Lower coke prices are expected soon.

**Semi-Finished Material.**—Available supplies are increasing as the British demand declines following resumption of operations in England. Weakness in prices is beginning to develop, especially for slabs. Blooms of 4-in. to 8-in. are quoted at £4 15s. to £4 17s. 6d. ($23 to $23.64) per ton, with heavy blooms at £4 12s. 6d. ($22.43) per ton. Billets are still fairly firm, with a smaller available supply and quotations range from £5 4s. to £5 5s. ($25.22 to $25.46) for 2½-in. to 4-in. and £5 5s. to £5 6s. ($25.46 to $25.70) per ton for 2-in. to 2½-in. billets.

**Finished Material.**—Most mills are seeking tonnage and prices are developing a distinctly downward tendency. Thus far concessions have been small, but only because of the small tonnages under consideration. Buyers, in expectation of lower prices, despite the curtailment of quotas by the International Steel Cartel, are withholding business until the effect of British resumption is more definitely known. Although mills are making an effort to maintain export prices on steel bars at about £5 12s. 6d. per ton, f.o.b. Antwerp, about 1.23c. per lb., export sellers are unwilling to pay more than £5 10s., about 1.20c. per lb. In the meantime French mills are quoting as low as £5 8s. 6d., f.o.b. Antwerp, about 1.17c. per lb., for desirable tonnages. Reinforcing bars are fairly firm at £6 per ton, about 2.31c. per lb., f.o.b. Antwerp.

One of the three lake boats that is being built at the Lorain, Ohio, yard of the American Shipbuilding Co. for the Interlake Steamship Co. will be named the Harry Coulby, in honor of the president of the latter company, who is also a member of Pickands, Mather & Co.

# Business Analysis and Forecast

BY DR. LEWIS H. HANEY

DIRECTOR, NEW YORK UNIVERSITY BUREAU OF BUSINESS RESEARCH

## Statistical Data Concerning the Chief Consuming Industries Indicate That:

**1. Sales of finished steel are below those of a year ago.**

**2. Trend in chief consuming industries indicates well-sustained activity, without over-production.**

**3. Lower level of car surplus indicates railroad orders may improve.**

**4. Structural steel sales likely to decline, due to gradual decline in building activity.**

**5. Automobile industry shows signs of over-production and 1927 output may be materially below 1926.**

**6. Average production in manufacturing industries shows seasonal slackening.**

**7. Oil and mining activity contributing full quota to demand, though coal troubles impend.**

**8. Heavy exports of November probably will not be maintained.**

UNFILLED orders for steel are in small volume as the new year starts and it is reasonably clear that forward buying will in general continue light. Most large buyers are either well supplied for some time to come or are sure of prompt deliveries at unchanged prices. We look for an irregular demand for structural steel, with keen competition among the producers. The sheet demand is likely to show a little improvement in the near future, and then sag off again. Pig iron competition will continue keen for several months and demand probably will be dull.

### *November Trend Encouraging*

THE trend of activity in the chief iron and steel consuming industries during November gives no ground for pessimism. The indications are that the activity in those industries, together with the exports of iron and steel, was sufficiently well sustained to support the existing rate of production of steel ingots for some time. Put in another way, it is apparent that steel makers curtailed promptly and that they have brought production well into line with the indicated potential requirements.

In this respect, the situation is much better than it was in 1923 when, as a glance at Fig. 1 will show, production of steel ingots ran much beyond any possible consumption and resulted in a severe decline. The chart proves that caution has been exercised and makes it probable that steel markets are not going to be depressed on account of over-production.

There is only one "but," and that lies in the fact that over one-half of the November rise in the composite demand line was abnormal. It was due to the temporary coal situation, which has thrown so many indexes for that month out of line. The coal situation caused a sharp rise, not only in mining activity, but also in freight traffic. To get a more normal picture, over half of the upturn in the curve at the end should be cut off. It would then be seen clearly that there was a decided peak in September and that the November point was little higher than the August level. Looking at it this way, we get the impression that in November there was merely a slight interruption of the general downward trend.

### *Orders Not Indicative of Activity*

CERTAINLY November sales and orders for finished steel did not reflect the gain in activity among steel consuming industries (see Fig. 2).

The fact remains, however, that there was a gain in industrial activity, for not only did railroad freight traffic and mining show a rising trend, considering the season, but the same is true of manufacturing industry (excluding the steel and automobile industries), and of exports of iron and steel. As to manufacturing, there was an actual decrease in total activity, but not so large as usually occurs between October and November. Exports were unusually large and increased, not only with great sharpness, but more than normally for the season.

The chief decline occurred in the automobile industry; machine tool orders slumped also. Doubtless there is some relation between these two facts. The decline

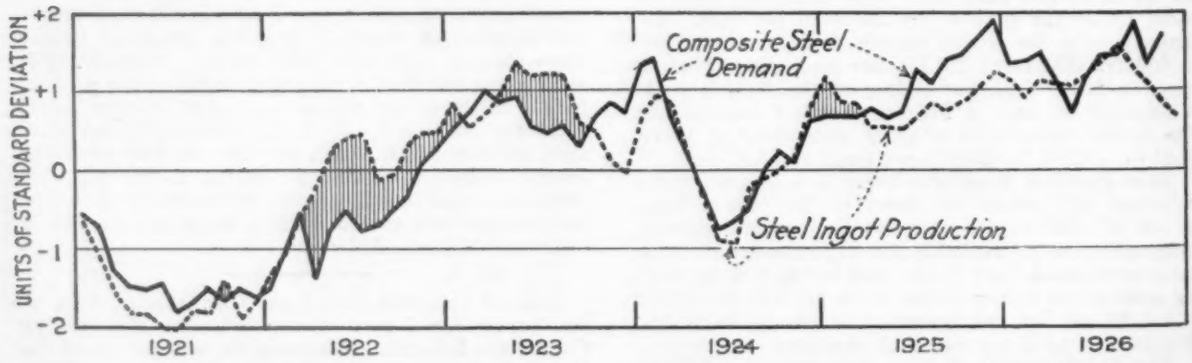


*Fig. 1—Steel Ingot Production, with Figures Adjusted for Seasonal Variations, Has Declined for Four Months. As it appears to be well below demand, further considerable declines are not to be expected*

# In This Issue

*No reason to anticipate a serious decline in business, says steel company head.*—John A. Topping points out that pessimists lose sight of the fact that country is rapidly growing, causing a steady increase in demand. Absorption of record production in 1925 and 1926 reveals enormous consumptive capacity.—Page 139.

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*New method of bundling sheets cuts unloading time from 4 hr. to 20 min.*—Sheets are packed flatwise in special 10-ton carrier, four to a car. Are preserved from damage in transit, and save railroad car from damage.—Page 131.

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*More than 3 billions worth of automobiles and trucks built in 1926.*—Automobile Chamber of Commerce estimates total production was close to 4.5 million vehicles.—Page 150.

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*No substantial overstock of manufactured goods at outset of 1927, Hoover points out.*—Believes that possible slackening in volume of building construction will be partially compensated for by increase in public construction.—Page 150.

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*British may join the European steel cartel.*—Prepared to join on a quota of 12 million tons.—Page 156.

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*Record carloadings established in 1926.*—Total of 53.3 millions was a gain of 4.1 per cent over last record, made in 1925.—Page 150.

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*Finds French cast iron pipe inferior to American product in impact and deflection values.*—Brittleness is due to higher phosphorus content, Bureau of Standards believes.—Page 140.

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*Hand-to-mouth buying militates against faster growth of iron and steel transportation by water.*—Even the largest consumers are not eager to buy in 2000-ton (boatload) lots.—Page 133.

*Over 67.5 million tons of iron ore mined in 1926.*—This was a gain of 9 per cent over 1925. Value was about 175 millions. Lake Superior district supplied approximately 85 per cent.—Page 136.

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*Wearing qualities of rails considerably increased by heat-treating.*—Rail is held firmly in a press-like machine to prevent distortion, and tank is raised, quenching the rail.—Page 131.

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*"Demand" situation is at least "fair," says Dr. Haney.*—No reason is yet apparent why any severe decline in first half of 1927 should be expected.—Page 161.

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*December daily steel output was almost 7 per cent below November.*—Although a production record was established for the year, both November and December were below corresponding months of 1925.—Page 165.

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*Prompt curtailment of steel output prevents depression of steel market on account of over-production.*—Steel makers have brought production well into line with indicated requirements.—Page 158.

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*Will prices gradually subside during next generation?*—While economic history leads to belief that they will, intervening obstacles, such as high taxes and high wages, will halt the movement at least temporarily.—Page 144.

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*Predicts 9 billions will be spent for building construction in 1927.*—Copper and Brass Research Association is optimistic regarding construction, and believes this industry will be one of the greatest for years to come.—Page 149.

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*Do "ghosts" in steel indicate weakness?*—They mark the location of segregated impurities, say inspectors, but steel makers deny that "ghosts" can be identified with fatigue failures.—Page 168.

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## Joint Economic Studies by The Iron Age Staff

FOR many years THE IRON AGE has depended greatly on its field editors, located in all the important market centers, to obtain a nation-wide picture of current tendencies in the iron and steel trade. The week-to-week collaboration in covering market news is supplemented by cooperative effort in investigating economic conditions affecting the future of the industry. Such an economic study, "The Aftermath of Pittsburgh Plus," was a feature of the annual review number of a year ago.

The annual issue published a week ago contains three articles, all of timely interest, that represent joint staff efforts. One of these, "Changing Trends in Scrap Trade," presents the first comprehensive compilation of the production of scrap by the railroads and the automobile industry. Another is an analysis of the steel warehouse business as affected by hand-to-mouth buying. A third, on the increasing use of waterways for shipping iron and steel, is concluded in the current issue.

*For News Summary See Reverse Side*

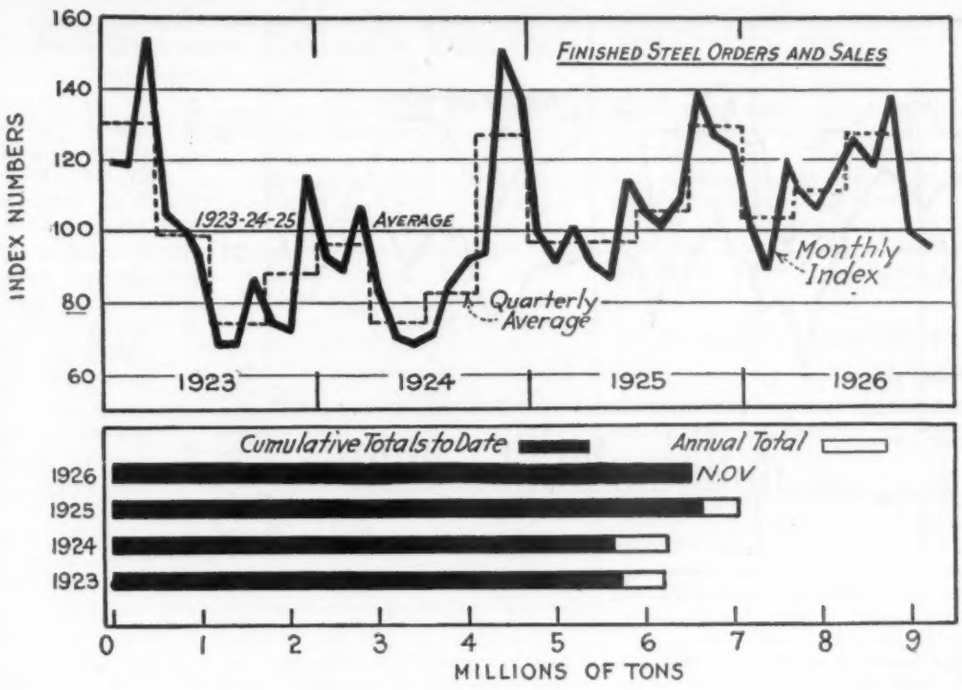



*Fig. 2—Finished Steel Orders. Sales in November did not reflect the gain in activity among steel-consuming industries. For the year, the total is now slightly below 1925, though far ahead of all previous periods*

in automobile production was the sharpest on our record.

### Conditions in Specific Fields

Looking to the future, it may be said that there are good prospects for a fairly well sustained level of activity in the iron and steel consuming industries. Car loading reports indicate that *railroad freight traffic* has declined more sharply in December than is usual, as was to have been expected, with the ending of the spurt in coal and with the concurrent recession in basic industries. This moderate recession makes it probable that there will be a little further decline in freight traffic beyond that usual for the season.

No significant change has occurred in the prospect that a gradual decline will continue in *building activity*. This is particularly true of residential and industrial building, for it is common in recessionary periods for construction in the nature of public works to increase, and such a development is to be expected in 1927. Regardless of temporary increases in the monthly statistics of building, the well known fact that the building shortage has been made up and that rents are sagging, while building costs remain high, is bound to control the situation during the course of the year. The seasonal decline in floor space contracts this December was greater than in 1924 or 1925.

No large decline in *general manufacturing* activity is now in sight, although a seasonal slackening will probably appear in the figures for December, January and February. The *automobile* industry, however, seems to be in a moderately unfavorable situation. While there doubtless will be some expansion in the spring, as usual (the peak generally occurring in May), signs of over-production are apparent in large dealer stocks, and competition will be extraordinarily severe. Probably the volume of automobile production will fall materially under that of 1926.

### Underground Industries Flourishing

The *oil industry* continues to be one of the brightest spots among the iron and steel consuming industries. November returns show continued expansion not only in production, but in rigs and drilling wells. The outlook for the other chief industries in the mining group, however, is not so good, as over-production exists both in bituminous coal and copper. Moreover, the threat of a bituminous coal strike on April 1 is a factor.

*Exports* made an extraordinarily good showing in November. This, we think, was due largely to the depressed condition of British industries accompanying the coal strike. If so, the improved conditions abroad make it probable that exports will fall back again.

*We conclude that the demand situation is at least "fair" and that there is no reason yet apparent to ex-*

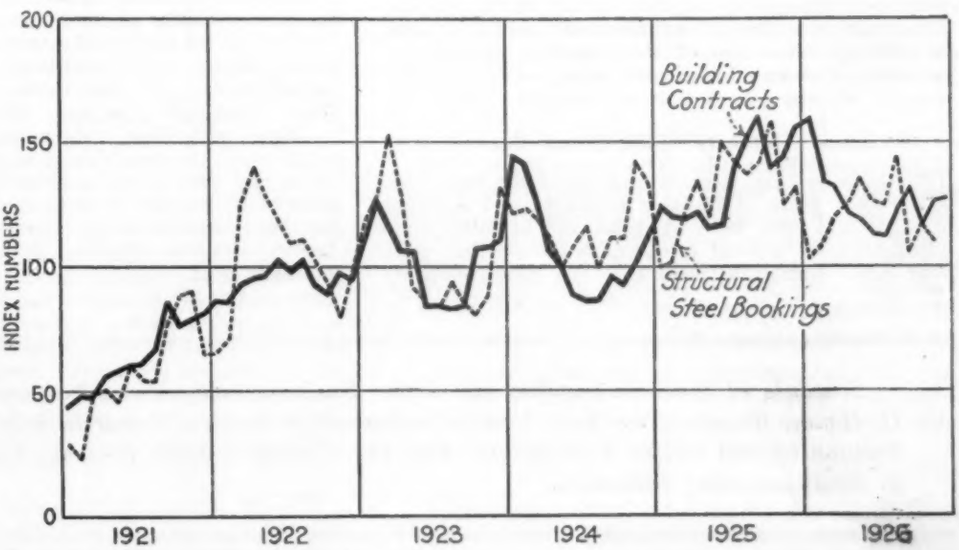



*Fig. 3—Building Activity, Measured in Floor Space, Remains Large, But Shows Signs of a Progressive Decline. The shortage appears to have been made up. The prevailing trend in fabricated structural steel is downward, also*

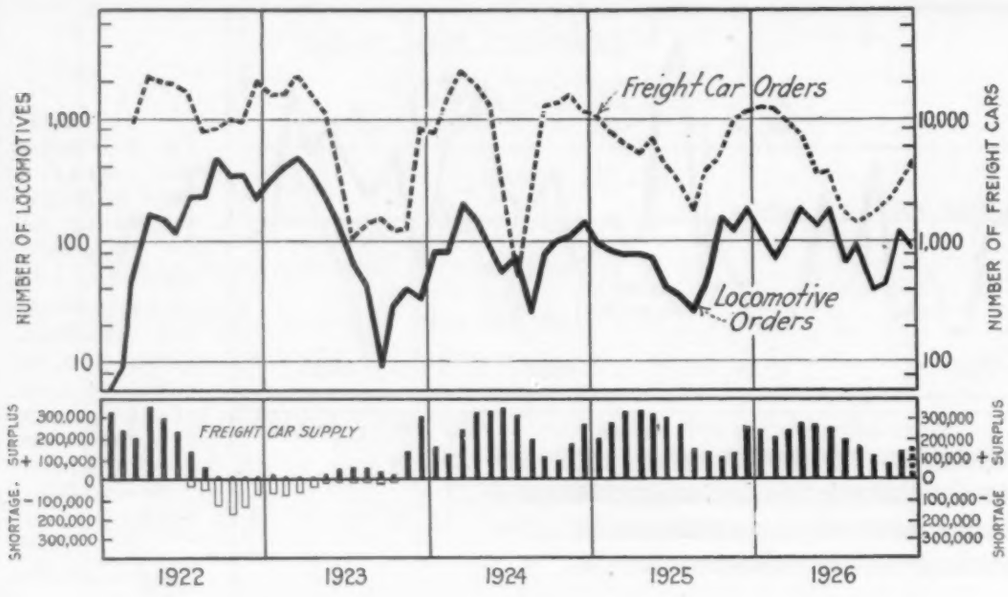



*Fig. 4 — Locomotive Orders in 1926 Were Well Above 1925. Car orders show an upward trend and business may be expected to improve. Both curves are plotted as a 3-month moving average*

*pect any severe decline in the first half of* 1927, *although it is probable that the year will not be so good as was* 1926.

Our index of the orders and sales of finished steel declined further in November, falling lower than in any month last year, excepting only the short month of February. It will be noted that the chart shows the level to be far below that of a year ago. The November index was 95.6 per cent of the average for 1923-25, against 99.9 per cent in October and 123.1 per cent in November, 1925. The peak in September was 138.5.

### Demand Line Falling Since September

The sharp drop in sales during October reflected the decline in the composite demand line, which began in September. One reason why we doubt the significance of the apparent rise in that line lies in the continued decline of finished steel sales in November. This at least shows that the increased volume of business in the consuming industries did not find expression in steel buying.

It is now practically certain that, for the first time in recent years, the fourth quarter sales of finished steel will be smaller than third quarter sales; also that the total sales for 1926 will fall appreciably behind the total for 1925—one of a good many illustrations that 1926 prosperity was not evenly distributed.

The big drop in steel sales occurred in *sheets*, in which the November figure was only 78 per cent of the 1923-1925 average. Of course, this reflects the slump in automobile production. Structural steel bookings were lower also, being only 94 per cent of the average. This tends to confirm the existence of a declining trend in building. Bookings of steel castings decreased 5 per cent. Fabricated steel plate sales, while below the average, showed a good seasonal increase.

### *Building Contracts Lower Than Year Ago*

FIG 3 shows that, toward the close of the year, both the floor space of building contracts and bookings of structural steel were irregular and in fairly close adjustment, at a level considerably below that of a year ago. Structural steel bookings were relatively low in comparison with the building curve, and the December figures are likely to show a rise. In fact, several large contracts have produced large lettings in two of the December weeks, bringing the weekly average for the month up to around 34,000 tons—the highest since last May.

### *Orders for Cars and Locomotives May Increase*

OUTLOOK for *railroad equipment* business may be called fair. The year ends with the monthly orders for locomotives and cars lower than at the beginning. But the total locomotive business in 1926 was better than in 1925, and, while this is not true of freight car orders, we find a good upward trend in such orders in the closing months of 1926. Moreover, the freight car surplus of the railroads is smaller than a year ago.

Locomotive orders fell off in December and it seems probable that the volume of business will continue irregular at about the same general level of the past year. Shipments were the largest since December, 1923, but unfilled orders declined to a low level (297). Freight car business, however, seems to have better prospects. There has now been an irregularly declining trend for at least two years and, in view of the smaller freight car surpluses, it seems reasonable to believe that orders for this kind of equipment will pick up a little.

## Simplified Practice Primer

Elimination of waste through simplifying the number and varieties of materials produced in industry has become the subject of a primer issued by the United States Bureau of Standards, and obtainable from the Superintendent of Documents, Government Printing Office, Washington, for 15c. The primer consists of 50 questions with their answers and is illustrated. The program of the Department of Commerce in reducing styles and sizes of commodities is shown, together with some of the results obtained from the campaign which has been carried on for the past five or six years. Lower costs and improved profits are among the advantages cited.

*Schedule of the next installments of the* **Business Analysis and Forecast,** *by Dr. Lewis H. Haney, Director New York University Bureau of Business Research, follows:* **Jan. 20**—*Position of iron and steel Producers;* **Jan. 27**—*General Business Outlook;* **Feb. 17**—*Activity in Steel-Consuming Industries.*

## Fourth Successive Increase in Steel Corporation's Unfilled Orders

For the fourth month in succession the unfilled orders of the United States Steel Corporation announced Jan. 10 showed an increase. And the increase was the largest of the four months. The total unfilled business on Dec. 31 amounted to 3,960,969 tons, an increase of 153,522 tons over the 3,807,447 tons on Nov. 30. This increase compares with one of 123,786 tons at the end of November, of 90,152 tons at the end of October and 51,174 tons at the end of September. The unfilled tonnage at the year end was the largest since the end of last March, when unfilled orders were 4,379,935 tons. A year ago the unfilled business was 5,033,364 tons. The following table gives the unfilled tonnage as reported by months beginning with January, 1924:

| | 1926 | 1925 | 1924 |
|---|---|---|---|
| Jan. 31..... | 4,882,739 | 5,037,323 | 4,798,429 |
| Feb. 28..... | 4,616,822 | 5,284,771 | 4,912,901 |
| March 31..... | 4,379,935 | 4,863,564 | 4,782,807 |
| April 30..... | 3,867,976 | 4,446,568 | 4,208,447 |
| May 31..... | 3,649,250 | 4,049,800 | 3,628,089 |
| June 30..... | 3,478,642 | 3,710,458 | 3,262,505 |
| July 31..... | 3,602,522 | 3,539,467 | 3,187,072 |
| Aug. 31..... | 3,542,325 | 3,512,803 | 3,289,577 |
| Sept. 30..... | 3,533,509 | 3,717,297 | 3,473,780 |
| Oct. 31..... | 3,683,661 | 4,109,183 | 3,525,270 |
| Nov. 30..... | 3,807,447 | 4,581,780 | 4,031,969 |
| Dec. 31..... | 3,960,969 | 5,033,364 | 4,816,676 |

The high record in unfilled orders was 12,183,093 tons at the close of April, 1917. The lowest was 2,674,757 tons on Dec. 31, 1910.

## New York Steel Treaters Discuss Aircraft Metals

An address on "Metallurgy in Aircraft" was listened to by members of the New York Chapter of the American Society for Steel Treating at its regular monthly meeting, Monday evening, Jan. 10. Horace C. Knerr, consulting metallurgical engineer, Philadelphia, was the principal speaker. He was formerly chief metallurgist of the United States Naval Aircraft Factory at Philadelphia and worked on the Shenandoah from start to finish. He is also the prime mover of the night school courses in heat treatment at Temple University, sponsored by the Philadelphia chapter. Mr. Knerr discussed the relative value of special steels and light alloys, the requisite heat treatments and welded, brazed or riveted joints as well as protection against corrosion.

## High-Frequency Electric Melting Furnaces for Steel

Some interesting data concerning a special phase of the electric steel melting industry was crowded out of the section of the Annual Review Number last week in which developments in additions to electric furnace melting capacity were discussed.

In the last two or three years the application of the high-frequency electric furnace, as developed by the Ajax Electrothermic Corporation, Trenton, N. J., has increased. This furnace is used for melting steel alloys of unusual composition as well as for producing unusually pure steel and alloy steels for special purposes. The company itself at Trenton has a 250-lb. and two 15-lb. steel melting furnaces in which it can melt at least 2,000,000 lb. per year in the larger furnace and 300,000 lb. in the smaller ones. There is also installed at the plant of the Westinghouse Electric & Mfg. Co., in Pittsburgh, a 100-kw. capacity furnace, which is regarded as capable of producing 1,000,000 lb. of steel per year. There are also two of the small furnaces at the Lynn works of the General Electric Co., whose annual capacity is put down as 300,000 lb. per year, the tonnage being figured in all cases on a basis of 24 hr. per day for five and one-half days per week.

The Ajax company is installing a 150-kw. furnace at the plant of the Babcock & Wilcox Tube Co., Beaver Falls, Pa., and another at the plant of the American Steel Foundries, near Chicago; the latter is rated at 60 kw.

In general the system, as developed in the Ajax-Northrup furnace, adapts itself to the melting of ferrous materials in from one to five-ton charges and possibly larger. The company has in contemplation the working up of designs and specifications for an equipment capable of handling 2-ton charges of steel. The larger the power unit involved, the less is the cost per kilowatt of the melting equipment and the higher the efficiency, says the company.

## Mahoning Valley Operations at 65 Per Cent Rate

YOUNGSTOWN, Jan. 11.—Iron and steel production for the second week in 1927 in the Mahoning Valley averages between 65 and 70 per cent.

Steel tube production shows stronger tendencies, with 13 of the 18 mills in the Mahoning Valley under power. Strip mills are active at 75 per cent. Independent bar mill capacity is below 50 per cent. Some sheet makers are curtailing production, rather than accept new business at a loss, which, they say, current price cutting entails. Consequently, sheet mill schedules show a loss, with but 80 of 127 mills scheduled, against 90 for the preceding week. Not all of the active 80 mills were to operate throughout the week.

Independents are operating 31 of 53 open-hearth furnaces and Bessemer plants on a parity.

Makers report that new business is being received in stronger volume, but in sheets and strips, at the expense of prices. There are indications that non-integrated sheet rollers, who are regular buyers of semi-finished steel, are likewise receiving some concessions from the established levels.

## To Improve Its Ashland Plant

Decision to expend $1,500,000 on improvements to its finishing mills and on erection of two open-hearth furnaces at its Ashland, Ky., plant has been announced by the American Rolling Mill Co. This construction program is part of a general policy to round out and develop production capacity at both the Ashland and Middletown units of the company, according to a statement from the office of George M. Verity, president. While the desirability of erecting blast furnaces at Middletown to supply hot metal to the open-hearth furnaces there has been discussed, no plan for such expansion has been agreed upon.

In a message addressed to Armco men and women, Mr. Verity states that "Our company is again facing a program that in importance and in magnitude is equal to the largest single undertaking to which we have ever been committed. Both our Middletown and Ashland divisions, as they now exist, must be rounded out to the very limit of their capacity to produce, and anything and everything that will legitimately reduce cost and increase our production and commercial efficiency must be done to enable us to meet the competition of the future.

Dr. Colin G. Fink of Columbia University will be the speaker at the Jan. 20 meeting of the New York section of the American Institute of Mining and Metallurgical Engineers. The section will meet at the Machinery Club, 50 Church Street, New York, at 6.45 p. m. for dinner, followed by Doctor Fink's talk at 8 p. m. on "Recent Developments in Electro-metallurgy."

A reduction in price was announced, effective Jan. 1, by the Sterling Wheelbarrow Co., Milwaukee, applying to the following products: Wheelbarrows, carts, trucks, truckware and repairs for them.

There were 980,856 sewing machines produced in the United States in 1925, according to the Bureau of the Census.

# FABRICATED STRUCTURAL STEEL

## Awards Total About 60,000 Tons Added to 50,000 Tons in the Preceding Week

An unusual record in structural steel awards has been made in the past two weeks. In the past week the lettings have totaled about 60,000 tons, while in the preceding week they were 50,000 tons, the figures in both cases being much above the average of weekly awards. A New York office building taking 10,000 tons, oil field work at Port Arthur, Tex., amounting to 6000 tons, a Masonic home at Providence, R. I., 5000 tons and a Chicago police station calling for 4100 tons are the largest jobs. Included in 21,000 tons of new work are three of outstanding size: An athletic club in Chicago, 6500 tons, a railroad bridge in New Jersey, 3800 tons, and an apartment building in Louisville, Ky., 3500 tons. Awards follow:

PROVIDENCE, R. I., 5000 tons, Masonic home, to Jones & Laughlin Steel Corporation.

BOSTON, 180 tons, bridge, West Newton Street, to Phoenix Bridge Co., Boston.

BOSTON, 325 tons, Broadway bridge, to Boston Bridge Works, Inc.

BOSTON, 400 tons, Roxbury high school, to Boston Structural Steel Co., Inc.

SOMERVILLE, MASS., 100 tons, theater, to New England Structural Co.

HANOVER, N. H., 250 tons, library, Dartmouth College, to Boston Bridge Works, Inc.

SPRINGFIELD, MASS., 300 tons, to Palmer Steel Co.

MOUNT VERNON, N. Y., 100 tons, warehouse, to Rubin & Cohen.

NEW YORK, 6285 tons in the following awards as reported to the Structural Steel Board of Trade: Six-story office building, 53 West Fifty-sixth Street, to Levering & Garrigues; St. Mary's Academy, Newburgh, and Neptune warehouse, New Rochelle, to McClintic-Marshall Co.; apartment hotel, Lexington Avenue and Sixty-third Street, to A. E. Norton, Inc.; building for Union Dime Savings Bank, 105 West Fortieth Street, and addition to Morgan Library, Madison Avenue and Thirty-sixth Street, to Post & McCord; 15-story apartment building, Eighty-third Street and Central Park West, 10-story apartment building, 325-337 East Forty-third Street, and 23-story loft building, Eighth Avenue and Thirty-ninth Street, to Harris Structural Steel Co.

NEW YORK, 300 tons, office building, Third Avenue, Bronx, fire house, Springfield, Queens, and two fire houses, Brooklyn, to Kues Brothers.

NEW YORK, 500 tons, garage and factory building, West Sixty-fourth Street, to Eastern Steel Co.

NEW YORK, 335 tons, church and rectory, Fifth Avenue and Ninetieth Street, to Hinkle Steel Construction Co.

NEW YORK, 1000 tons, apartment building, 150 Riverside Drive, to Dreier Iron Works.

NEW YORK, 170 tons, apartment building, 57 East Eighty-seventh Street, to Dreier Iron Works.

BROOKLYN, 200 tons, motion picture theater, to Hinkle Steel Construction Co.

NEW YORK, 10,000 tons, office building at 2 Park Avenue, to Levering & Garrigues Co.

BROOKLYN, 1000 tons, boiler house for Bush Terminal Co., to Shoemaker Bridge Co.

NEW YORK, 2000 tons, building for outdoor patients at Columbia Presbyterian Medical Center, to Hedden Iron Construction Co.

RIDGEWOOD, L. I., 250 tons, motion picture theater, to Hinkle Steel Construction Co.

HUNTINGTON, L. I., 100 tons, high school, to Atlantic Structural Steel Co.

MINEOLA, L. I., 300 tons, high school, to Atlantic Structural Steel Co.

HACKENSACK, N. J., 250 tons, Y. M. C. A. building, to Oltmer Iron Works.

JERSEY CITY, 100 tons, garage, to Oltmer Iron Works.

LEONIA, N. J., 200 tons, motion picture theater, to Selbach-Meyer Co.

PHILLIPSBURG, N. J., 250 tons, public school, to Bethlehem Construction Co.

NEWARK, N. J., 1000 tons, addition to Newark City Hall, to Hay Foundry & Iron Works.

KEARNY, N. J., 1000 tons, addition to plant of Western Electric Co., to McClintic-Marshall Co.

BELMAR, N. J., 800 tons, bridge over Shark River, to McClintic-Marshall Co.

ATLANTIC CITY, N. J., 700 tons, Childs restaurant, to American Bridge Co.

ATLANTIC CITY, N. J., 500 tons, highway bridge over Albany Avenue, to Phoenix Bridge Co.

CLEVELAND, 1000 tons, warehouse for Bourne-Fuller Co., to Forest City Structural Steel Co.

PAINESVILLE, OHIO, 100 tons, music building for Lake Erie College, to National Iron & Wire Co.

BUFFALO, 2200 tons, city hospital, to Kellogg Structural Steel Co.

NIAGARA FALLS, N. Y., 125 tons, Carborundum Co., to Kellogg Structural Steel Co.

CALLERY, PA., 100 tons, building for National Steel Products Co., to Guibert Steel Co., Pittsburgh (originally reported to J. E. Moss Iron Works).

INDIANA, PA., 100 tons, Indiana Normal School gymnasium, to Guibert Steel Co.

PITTSBURGH, 1600 tons, 10 barges for Iron City Sand Co., to American Bridge Co.

DETROIT, 1200 tons, transmission towers for Detroit Edison Co., to American Bridge Co.

AKRON, OHIO, 5000 tons, M. O'Neil Co. department store, to American Bridge Co.

PORT ARTHUR, TEX., 6000 tons, for the Gulf Refining Co., to Riter-Conley Co.

BROWNSVILLE, TEX., 400 tons, bridge over the Rio Grande, to Virginia Bridge & Iron Co.

LOUISIANA RAILWAY & NAVIGATION CO., 275 tons, piers for bridge.

CHICAGO, 4100 tons, Central Police Station and Court building, to American Bridge Co.

CHICAGO, 200 tons, apartment building at 22 East Delaware Place, to Eggers-Shillo Co., local.

CHICAGO, 350 tons, Lucy Flowers Public High School, to unnamed bidder.

PROVISO, ILL., 1300 tons, Chicago & North Western freight station, to American Bridge Co.

TURLOCK, CAL., 100 tons, penstock lining and crane rail, to Pacific Coast Engineering Co., Oakland, Cal.

SAN FRANCISCO, 620 tons, two 80,000-bbl. tanks for the Associated Oil Co., to Western Pipe & Steel Co.

OAKLAND, 500 tons, Finance Building, to Judson Mfg. Co., San Francisco.

OCEANSIDE, CAL., 400 tons, pleasure pier, to Llewellyn Iron Works.

OCEANSIDE, 215 tons, civic auditorium, to Brombacher Iron Works, Los Angeles.

LOS ANGELES, 3500 tons, building for the Title Insurance & Trust Co., to Llewellyn Iron Works.

SEATTLE, 1150 tons, Seattle Theater, to Wallace Bridge & Structural Co., Seattle.

HONOLULU, 290 tons, auditorium for the McKinley School, to Pacific Engineering Co., Honolulu.

### Structural Projects Pending

Inquiries for fabricated steel work include the following:

DELAWARE, LACKAWANNA & WESTERN RAILROAD, 3800 tons, bridge over the Hackensack River in New Jersey.

PHILADELPHIA, 400 tons, highway bridge.

PHILADELPHIA, 300 tons, private school.

FLUSHING, L. I., 400 tons, building for First National Bank.

ASHLAND, KY., 1300 tons, building for the American Rolling Mill Co.

LOUISVILLE, KY., 3500 tons, Heyborn apartment building.

CLEARING, ILL., 500 tons, building for the Continental Can Co.

CHICAGO, 6500 tons, Medinah Athletic Club.

CHICAGO, 1500 tons, cable building for the Western Electric Co.; Turner Construction Co., general contractor.

NEW ORLEANS, 2000 tons, Monteleone Hotel.

NORTHERN PACIFIC RAILROAD, 150 tons, I-beam spans.

MISSOURI PACIFIC, 300 tons, bridge trusses.

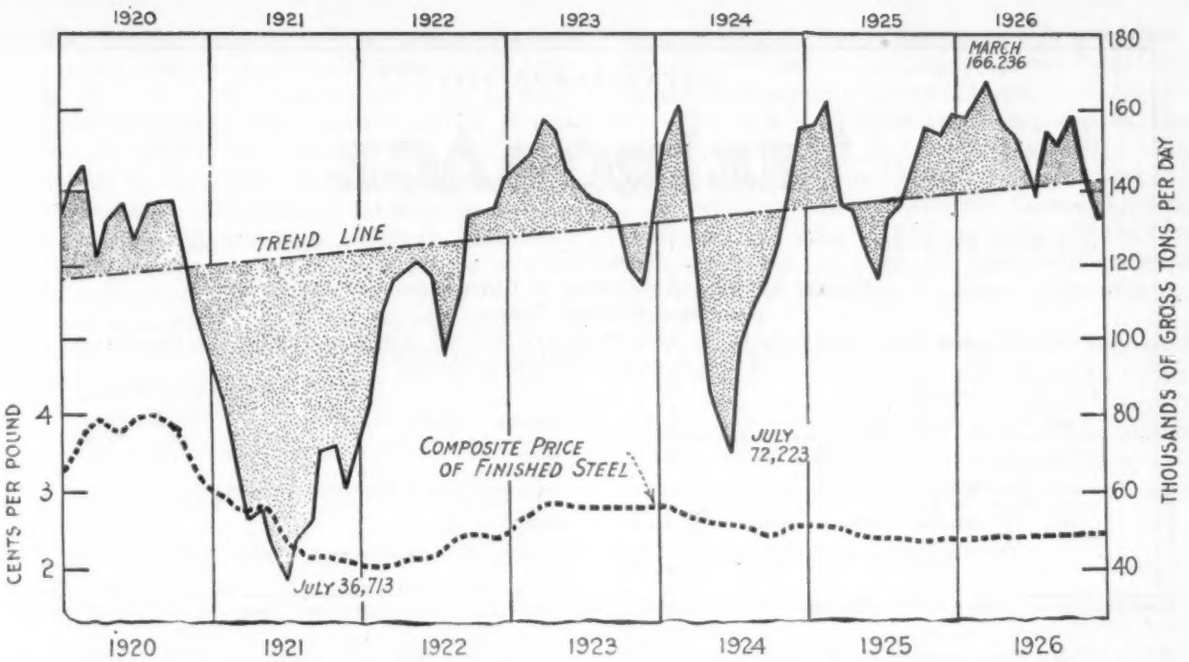
RIVERSIDE, CAL., 600 tons, pipe line; H. W. Rohl, San Francisco, low bidder on general contract.

BLYTHE, CAL., 650 tons, State highway bridge.

# Tonnage Rates for Sheet Mill Workers Unchanged

YOUNGSTOWN, Jan. 11.—Tonnage rates for sheet and tin mill workers in mid-western mills continue unchanged for January-February, at 33 per cent above base, following the bimonthly examination of sales sheets today. The examination disclosed an average selling price of Nos. 26, 27 and 28 gage black sheets shipped during the 60 days ended Dec. 31, of $3.25 per 100 lb., unchanged from the average which has applied for a number of bimonthly periods.

The settlement is the second conducted by Elias Jenkins, of Youngstown, new secretary of the Western Sheet & Tin Plate Manufacturers Association.




*December's Production of Steel Ingots Dropped Below the Line Representing the Trend of Consumption, but the Year's Output Averaged 7 Per Cent Above*

# Last Year's Ingot Output a Record

## At 47,133,517 Tons, 1926 Exceeded 1925 by 6.8 Per Cent—Year's Operation at 84.40 Per Cent of Capacity—Sharp Drop in December Rate

WITH the December production of steel ingots for all companies at 3,472,000 gross tons, as compiled by the American Iron and Steel Institute, the 1926 total was 47,133,517 tons. This is an increase of 2,992,779 tons, or about 6.8 per cent over the 44,140,738 tons made in 1925. The 1926 total is a new record for ingot output. The data approximate closely to the estimates made by THE IRON AGE of 47,000,000 tons for the year.

The statistics show that the December production of the companies which made 94.50 per cent of the country's total in 1925 was 3,281,040 tons. Assuming that the 5.50 per cent not reporting produced at the same rate, a total December output is indicated of 3,472,000 tons, from which a daily rate of 133,538 tons was calculated, allowing for 26 working days. According to the estimates of the institute, December operations were 74.37 per cent of "theoretical" capacity, compared with, roughly, 80, 88, 84, 86 and 78 for November, October, September, August and July respectively. The average for the year, with 311 working days recognized, was 84.40 per cent compared with 79.05 per cent in 1925. For the peak month of the year, March, the percentage was 92.58.

The table gives the reported production by months of the different kinds of steel, together with the estimated daily rate for all companies.

**Production of Steel Ingots**

(Gross Tons)

| Months 1926 | Reported by Companies Which Made 94.50 Per Cent of the Steel Ingot Production in 1925 | | | Calculated Monthly Production | Approximate Daily Production |
|---|---|---|---|---|---|
| | Open-Hearth | Bessemer | All Other | All Companies | All Companies |
| Jan. | 3,326,846 | 581,683 | 13,664 | 4,150,469 | 159,633 |
| Feb. | 3,023,829 | 556,031 | 12,818 | 3,801,776 | 158,407 |
| March | 3,590,791 | 635,680 | 15,031 | 4,488,362 | 166,236 |
| April | 3,282,435 | 601,037 | 13,652 | 4,123,941 | 158,613 |
| May | 3,201,230 | 516,676 | 10,437 | 3,945,336 | 151,744 |
| June | 3,036,162 | 498,764 | 9,441 | 3,750,653 | 144,256 |
| July | 2,911,375 | 526,500 | 12,372 | 3,651,055 | 140,425 |
| Aug. | 3,145,055 | 627,273 | 12,003 | 4,004,583 | 154,022 |
| Sept. | 3,089,240 | 612,588 | 12,660 | 3,930,675 | 151,180 |
| Oct. | 3,224,584 | 630,526 | 12,348 | 4,092,548 | 157,406 |
| Nov. | 2,915,558 | 592,239 | 9,605 | 3,722,119 | 143,158 |
| Dec. | 2,778,949 | 493,172 | 8,919 | 3,472,000 | 133,538 |
| Total | 37,526,054 | 6,872,169 | 142,950 | 47,133,517 | 151,555 |
| 1925 | | | | | |
| Jan. | 3,263,256 | 689,996 | 11,960 | 4,193,281 | 155,307 |
| Feb. | 2,933,225 | 602,042 | 12,998 | 3,752,352 | 156,348 |
| March | 3,337,721 | 614,860 | 13,633 | 4,194,340 | 161,321 |
| April | 2,858,866 | 515,715 | 14,182 | 3,583,676 | 137,834 |
| May | 2,755,561 | 497,708 | 13,790 | 3,454,971 | 132,883 |
| June | 2,540,729 | 476,945 | 12,490 | 3,204,451 | 123,248 |
| July | 2,446,068 | 457,095 | 13,547 | 3,084,472 | 118,634 |
| Aug. | 2,698,285 | 523,734 | 12,914 | 3,420,998 | 131,577 |
| Sept. | 2,738,673 | 547,121 | 13,977 | 3,489,565 | 134,214 |
| Oct. | 3,077,114 | 584,567 | 15,624 | 3,888,814 | 144,030 |
| Nov. | 3,092,194 | 581,347 | 17,085 | 3,902,900 | 156,116 |
| Dec. | 3,169,796 | 569,304 | 15,843 | 3,970,918 | 152,728 |
| Total | 34,911,488 | 6,660,434 | 168,043 | 44,140,738 | 141,932 |

## Would Investigate Companies Making Metals and Metal Products

WASHINGTON, Jan. 11.—Senator Frazier of North Dakota has introduced a resolution which would direct the Tariff Commission to investigate "the costs of production, capitalization, efficiency, wages paid, business methods, and profits or losses of typical corporations" manufacturing metal and metal products and textiles. The resolution, which was referred to the Committee on Education and Labor, would call for an inquiry among an equal number of "those showing large profits and those claiming in 1924 'no net income,'" the report to be made to Congress not later than Dec. 1, 1927.

The resolution declares that the report of the Commissioner of Internal Revenue shows that in 1924 the net income of corporations manufacturing metal and metal products was $1,340,597,253 and that "such corporations reporting 'no net income' paid that year $23,912,237 in cash dividends, and $3,987,346 in stock dividends, and there is a high protective tariff duty on most textiles and textile products and on most metals and metal products."

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# THE IRON AGE

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## War Time Construction Equalized

WITH the lapse of time the steel producing trade has come to view with more equanimity the large amount of new steel works construction that occurred during the war. At the close of the war the productive capacity seemed to be such that only an unusual burst of peace time demand would employ it. Yet the percentage rate of growth since 1913 has really been less than half the rate in the eleven years previous.

It is possible to make estimates of capacity at different times sufficiently accurate for measuring the rates of growth in capacity before the war, during the war and since. "Capacity" is here used to comport in meaning with the 55,844,033 tons which the American Iron and Steel Institute assigned to the end of 1925.

As to early capacity, one may assume that 1902 production was 95 per cent of capacity at the close of the year, and 1913 production 85 per cent of capacity at the close of that year.

New construction has been recorded year by year in the Annual Review Numbers of THE IRON AGE. The new construction, 1914 to 1925 inclusive, falls 17 per cent short of accounting for the increase in capacity that occurred. There were increases through better working at plants that were not specifically enlarged, to cover not only this 17 per cent, but something more, involved in abandonments.

The new construction as recorded in our annual summaries has been as follows:

*New Construction, Tons Annual Ingot Capacity*

| | | | |
|---|---|---|---|
| 1914 | 1,215,000 | 1920 | 675,000 |
| 1915 | 1,405,000 | 1921 | 247,500 |
| 1916 | 4,205,000 | 1922 | 227,500 |
| 1917 | 4,326,000 | 1923 | 875,000 |
| 1918 | 1,945,000 | 1924 | 375,000 |
| 1919 | 625,000 | 1925 | 585,000 |

Distributing the unreported growth mentioned, about 292,000 tons annually, capacities have been approximately as follows:

*Annual Capacity, End of Year*

| | | | |
|---|---|---|---|
| 1902 | 15,322,000 | 1918 | 50,180,000 |
| 1913 | 35,625,000 | 1925 | 55,844,000 |

The capacity at the end of 1925 is that assigned by the American Iron and Steel Institute. Capacity at the end of 1926 may be taken as increased by the 865,000 tons reported in last week's Annual Review Number of THE IRON AGE plus 292,000 tons of unseen growth, making 57,000,000 tons for the end of 1926.

The rapid increase during the war lasted only a short time, while the slow increase has now lasted eight years. The result is that the average rate in the thirteen years is quite small relative to the growth prior to the war. The percentage increases have been as follows:

| | Total, Per Cent | Annual Average, Per Cent |
|---|---|---|
| 1902-13 | 133 | 8.0 |
| 1913-18 | 41 | 7.1 |
| 1918-26 | 14 | 1.6 |
| 1913-26 | 60 | 3.7 |

Even the percentage growth Dec. 31, 1913, to Dec. 31, 1918, averaged less per annum than the rate in the preceding eleven years, while the growth since has been so small as to make an average rate since the end of 1913 less than half, in annual percentage, of the prior rate.

## Future of Steel Warehousing

A LARGE manufacturing company, having allowed its stock of steel bars to run low on certain sizes, recently placed an order for a mixed carload with a mill and insisted on shipment in one week. To meet the customer's requirements the mill was obliged to take some of the sizes from stock and the carload was shipped at regular mill prices. This instance, which is duplicated rather frequently today, is indicative of the way in which the steel mill is being called upon to act as a warehouse for the customer, with the result that larger and more varied stocks are carried by the mill than formerly was the case. This situation is one phase of the new difficulties facing the jobbers of steel products. The whole subject of warehouse distribution was analyzed in the Annual Review Number of THE IRON AGE in a staff article giving consideration to the conflicting factors from every angle.

AT 315,800 gross tons the American ferromanganese industry made a new peace-time production record last year, according to figures

collected by THE IRON AGE. The largest previous output in a post-war year was 295,400 tons in 1920 while the war record was 333,000 tons in 1918. The contrast between the present situation in this important industry and that in 1913 is striking. Over half of our consumption of ferromanganese was imported in that year and the home production was only 119,500 tons. In the year just ended the domestic alloy supplied about 90 per cent of the consumption. It is fortunate that this key industry is so firmly established and so capable of expansion. Its firm foundation assures supplies in every time of crisis, the only drawback being the paucity of high-grade domestic ores.

## Electric Furnace Increase in 1926

ADDITIONS last year to American electric steel melting capacity accent the rapid expansion of the industry in the last three years. As shown in our annual review, published last week, the installations in 1926 practically duplicated those of the two preceding years, 41 furnaces being added, as compared with 43 in 1925 and 40 in 1924. Of close to 500 furnaces now in use nearly 25 per cent have been added in the last three years. This growth was exceeded only by that of the war years, 1917 alone adding 97 furnaces.

The particular adaptability of electric melting and refining to the production of high-quality steels was further demonstrated last year by the decision of one large company to more than double its capacity by adding two 15-ton furnaces and one 7-ton furnace to its battery of five 6-ton units. This was a conspicuous item in last year's progress.

## New England Industries Gain

POWER consumption in manufacturing industry is a dependable gage of business conditions as they affect such industry. When demand falls off production drops and the power curve goes down. Similarly, when demand picks up power consumption increases. The New England Power Co. distributes a vast amount of power chiefly derived from hydroelectric plants on the Connecticut and Deerfield Rivers. It serves a population of some 1,600,000 people and supplies with power industries employing close to half a million men and women. The company has compiled figures for 1925 and 1926 which afford a comparison of power consumed in these mills and factories, excluding all new customers and added departments for old customers. The consumers were literally the same, in establishments and parts of establishments.

Companies served by the New England system which are a part of the metal-working industries used 97,355,000 kilowatt hours in 1926. In the year preceding they used 88,196,000 kilowatt hours. The gain was 10 per cent. The groups include some of the most important plants in Massachusetts and Rhode Island, among them the Worcester works of the American Steel & Wire Co., which requires some 12,000 horsepower.

The paper industry gained 13.70 per cent, from 54.375,000 to 61,832,000 kilowatt hours; the rubber industry 4.22 per cent, from 15,147,000 to 15,786,000 kilowatt hours; and miscellaneous industries gained 11.41 per cent, from 17,152,000 to 19,110,000 kilowatt hours. As might have been expected, the textile industry fell off, from 112,742,000 to 107,707,000 kilowatt hours. The total current used for manufacturing was 301,790,000 kilowatt hours, representing a gain of 4.93 per cent. The actual gain was larger, of course, for new customers were added and old customers increased their requirements.

These figures are apart from power consumed for traction lines and other public utilities. They represent a great diversity of manufacture, chiefly in Massachusetts and Rhode Island, and constitute another proof that 1926 was a sound and expansive year in manufacturing industry.

## Tin Supplies and Prices

SHARP contraction last year in the world's visible supply of tin explains in part the high levels to which prices held throughout the twelve months. On Dec. 31 the visible supply was 16,326 gross tons, as against 18,024 tons and 28,250 tons at the close of 1925 and 1924. The decline last year was about 9.5 per cent from the 1925 figure and 42.5 per cent from that of 1924. The reflection of this diminished supply in market prices is an average quotation for spot Straits tin of 50.19 cents per pound, New York, in 1924, an advance to 57.90 cents as the average for 1925 and to 64.29 cents for 1926. These values compare with 85.28 cents for the war year 1918, and 44.33 cents for 1913. Tin advanced last year nearly 50 per cent above the pre-war average and to 75 per cent of the highest war average. The year's average was but little less than that of 65.68 cents in 1919 when the industry for part of the year was under Government control. It has been alleged that methods of control similar to those in the rubber market have been applied to tin by the British. However, the fact that shipments from the Straits Settlements last year were about 2500 tons less than in 1925 falls far short of being adequate basis for such an allegation.

## The Cost of Uniform Steel

EVER since the days when heavy forgings were finished on planers or lathes, machinists have noticed certain light colored markings or streaks in the metal, marks laid bare by one cut, to be obliterated by the next, but reappearing in another place. Sometimes a very fine finish cut would cause them to disappear. These marks were named "ghosts," as descriptive of their evanescent character.

The word has now arisen to plague both the steel maker and the steel user. A ghost is a fearsome thing. We have too lately discovered the natural causes of the supernatural to be entirely free from childish superstitions and rabbit-foot charms. Hence the cry has arisen that ghosts must be kept out of steel. The belief that they can and should be eliminated has caused many a heated dispute between inspectors and steel makers.

But can they be eliminated? Or should they be? We confess we do not know the answer, for

it is impossible to get any general agreement among purchasers about the specific effect of ghosts in forgings, nor do steel manufacturers agree upon what ghosts are and how they can be eliminated.

A scrupulous inspector would point out that ghosts, if they are anything, must certainly be regions where the metal is different from that of its surroundings. Uniformity is his watchword. Ghosts must go! He quotes authority to show that ghosts mark the location of segregated impurities, and then argues that these will be regions where fatigue cracks will start. He cuts test bars out of the forging at right angles to the direction of work, and points to their low ductility, to substantiate his position. He also is fond of pickling specimens in strong acid, especially of steels that have given trouble in heat treatment, and pointing out the generally seamy surface as evidence that the suspected steel should never have been sold.

The steel maker, on the other hand, will ask for definite evidence coupling fatigue failures in service with ghost lines in steel. For every one discovered he will endeavor to exhibit ten caused by tool marks or sharp fillets. He would also argue that non-homogeneity is not in itself a cause of fatigue failure, since wrought iron is a favorite material for boiler staybolts. He insists that if a fine turning curls off without breaking when it crosses a ghost, the metal there must be sufficient in good qualities to discount a slight variation in luster or color. He knows drop-forgers who demand steel which develops strongly marked flow lines, ascribing to these flow lines a tough fibrous quality, and who carefully proportion the dies so that the finished article will possess flow lines properly disposed to the working forces.

It would be well for both parties to this controversy to remember that circumstances alter requirements. A gun tube which must resist bursting impact calls for a structure different from that of a hollow shaft which resists torsional shear. Corrugated iron, on the other hand, should resist corrosion. It is important, furthermore, to remember at all times that steel by its very nature is a non-homogeneous material. It must contain iron and iron carbide crystals, and always will contain more or less additional compounds and metals, either added by design or existing as undesirable impurities. Such a substance cannot be free from variations in structure. The degree to which gross segregations exist, however, is related to the purity of the raw materials, the skill and honesty of the workmen, and the adequacy of their equipment.

For reasons such as above there have been developed various grades and classes of commercial steel, each reasonably well suited for the duty intended. Rails, flange steel, structural steel, screw-cutting stock, the merchant bar—each represents a reasonable compromise between the service expected of the part, the price which can be paid for it, and the quality of the steel contained in that specification.

If a specification is changed to require a steel made from specially pure iron, held in the furnace for an unusual time, and cast under conditions specially devised to minimize segregation, then the writers of such specifications should be prepared to pay the extra cost of these extra precautions, and should be sure enough of their own ground to be able to justify the extra cost by an equal or greater value in the finished article.

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# ALLOY STEEL IN 1926

## Production of Different Forms and Distribution by Consuming Industries

RETURNS respecting alloy steel were made to THE IRON AGE covering output in 1926 by companies making 20,117,300 tons of the year's output in finished steel. The total amount of alloy steel was given as 605,740 tons. This amounts to only 3 per cent of the output. Yet the statistics of the American Iron and Steel Institute for the preceding year, 1925, show no less than 2,320,390 tons of alloy steel ingots as that year's output, or 5¼ per cent of the total of ingot production. Of this, basic open-hearth steel furnaces contributed 1,935,676 tons, most of the rest coming from electric furnaces. One of the companies not specifying alloy steel product in the 1926 returns is known as an alloy steel maker, but few of the remaining companies which produced the 12,318,000 tons of finished product making up the total of 32,435,000 tons reported in last week's issue are regarded as conspicuously in the alloy steel field.

A 3 per cent alloy steel output measured in ingots would mean 1,414,000 tons out of last year's output of some 47,133,000 tons, whereas a mere maintaining of the relative performance of 1925 would show 2,475,000 tons, or 1,000,000 tons and more unaccounted for. The conclusion forces itself that there is a lack of specific definition of alloy steel. Presumably the lines were drawn tightly in designating alloys in the reports sent to THE IRON AGE. On the face of the institute's figures for recent years, 1926 must have supplied in excess of 1,750,000 tons of alloy steel products, or three times as much as 58 per cent of the industry reported as such to THE IRON AGE.

However, interesting facts are deducible from the particulars of the production of 605,740 tons, as given in the accompanying tables.

### Distribution of Alloy Steel

*(Thousands of Gross Tons)*

| | Plates | Bars | Strips | Sheets | Billets | All Others* | Totals |
|---|---|---|---|---|---|---|---|
| Railroads | 0.09 | 5.56 | ... | ... | 4.68 | ... | 10.33 |
| Buildings | 0.72 | 0.09 | 0.02 | 0.44 | 0.33 | 0.94 | 2.54 |
| Automobiles | 2.63 | 420.86 | 1.97 | ... | 46.73 | 0.71 | 472.90 |
| Oil industry | 0.60 | 4.92 | ... | 0.60 | 2.02 | ... | 8.14 |
| Mining | ... | 1.80 | ... | ... | ... | ... | 1.80 |
| Agriculture | ... | 1.63 | 1.99 | ... | 0.02 | ... | 3.64 |
| Shipbuilding | 0.09 | 0.71 | ... | ... | ... | 0.01 | 0.81 |
| Machinery | 0.02 | 5.99 | ... | ... | 2.23 | 0.30 | 8.54 |
| Exports | ... | 2.50 | ... | 3.95 | ... | 0.06 | 6.51 |
| Miscellaneous | 0.31 | 19.22† | 0.25 | 41.38 | 22.07 | 0.68 | 83.91 |
| Totals | 4.46 | 463.28 | 4.23 | 46.37 | 78.08 | 2.70 | 599.12 |
| Undistributed | ... | ... | ... | ... | 6.62 | ... | 6.62 |
| | | | | | | | 605.74 |

*Includes 1140 tons of alloy steel shapes, 0.90 M. tons going to building work and 0.24 M. tons to automobiles.
†Includes 2100 tons distributed through warehouses.

*Consumption of Alloy Steel*

| | Per Cent |
|---|---|
| Automotive industry | 79 |
| Railroads, oil industry, and machinery and machine tools, each | 1½ |
| Exports | 1 |
| Miscellaneous uses | 15½ |

*Production of Alloy Steel*

| | |
|---|---|
| Bars | 76½ |
| Billets | 14 |
| Sheets | 7½ |
| Plates, strips, shapes, etc. | 2 |

# 1926 a Good Year in Cast Iron Pipe

## Output Was Large, But the 1925 Figure Was Probably Not Surpassed—French Pipe Not an Important Factor—More Centrifugal Production

WHILE the production of cast iron water and gas pipe during 1926 is estimated as not in excess of the record output of 1,414,252 tons in 1925, which was the peak of a steady advance since the war, comparing with 1,134,059 tons in 1923 and 1,365,272 tons in 1924, the year as a whole ranks well in the records of the industry. Although imports of European pipe from the two large Continental foundries, the Societe Anonyme Des Hauts-Fourneaux et Fonderies de Pont-a-Mousson in France and the Gelsenkirchen Bergwerks A. G. in Germany, are estimated at close to 90,000 tons for the year, this competition had little effect on market conditions in this country.

### French Competition

The French company was a factor during the first quarter, but early in the spring began to withdraw from competition on the smaller sizes and did not reappear as an active competitor until the closing weeks of the year. The German producer continued, as in previous years, to sell on the Pacific Coast, but with the exception of a protracted and largely unsuccessful effort to secure about 10,000 tons of pipe from the city of New York, on which it was the low bidder, did not figure to any extent in the East.

The chief development in manufacture was the increased production of centrifugally cast pipe. The American Cast Iron Pipe Co., Birmingham, Ala., entered upon the production of sand spun pipe in August and by the end of the year was operating on a considerable scale. R. D. Wood & Co. installed equipment in their Florence, N. J., foundry for the manufacture of sand spun pipe, but have not yet begun commercial production. While official figures of centrifugal pipe output are not made public, the total for the year by both the De Lavaud and sand spun processes is estimated at 200,000 to 225,000 tons, the sand spun process contributing a relatively small percentage.

### Prices Lower As Year Advanced

At the year end the price situation was in contrast with the strength of the market early in January, when $1 to $2 per ton increases were under consideration by many makers. By the end of January, however, prices began to sag in the Chicago district, with only small-lot purchases providing activity. Meanwhile, Birmingham producers were increasing their rate of operation, and despite increased buying as spring advanced, the softness in prices that had been evident chiefly on the larger sizes began to affect the entire market.

By June the Birmingham base had dropped to $40 per ton from the January level of $42 and before long $39 began to appear on desirable tonnages. Northern makers succeeded in maintaining prices on a fairly firm basis until well into the fall, except when competition from the French foundry appeared. Late in the year both Northern and Southern makers began to seek tonnage and concessions were more common. Deliveries, which from late spring to the end of July had gradually extended to five and six weeks on the smaller sizes, began to shorten. As winter approached, concessions of $1 to $2 per ton for winter delivery, which were not offered in the record year of 1925, grew to be rather general and in the final two months of the year Birmingham makers, seeking comfortable backlogs to carry them over into the new year, began negotiating business at figures representing drastic concessions from the $40 Birmingham base. This developed softness in the North and the close of the year showed a generally lower level of prices.

The East was a moderately active market for pipe in 1926 and the Middle West is estimated to have made purchases that were fairly comparable with those of 1925. Detroit closed for more than 22,500 tons of pipe, Chicago purchased close to 8000 tons, Milwaukee's awards were in excess of 10,500 tons and several smaller cities closed sizable totals.

In the East the city of New York bought more than 22,500 tons of pipe and the city engineers announced plans for the expenditure in the future of about $2,400,000 on water and gas pipe. A total of about $5,000,000 of city stock is being offered in the new year for the Department of Water Supply, Gas and Electricity. Other large Eastern purchasers included Salem and South Essex, Mass., with about 6000 tons each; Syracuse, N. Y., with about 5000 tons, and the city of Boston with several large lots. The two outstanding purchases of the year, exclusive of the 10,000 tons of pipe bought by New York, were 14,000 tons each for St. Petersburg, Fla., and Amarillo, Tex. Export business was good and American makers apparently secured a fair share of foreign business.

### Made Changes

Mergers of pipe producers were discussed during the year. In the spring an effort was made to merge several Southern producers, the National Cast Iron Pipe Co., Birmingham, and the Lynchburg Foundry Co. and Glamorgan Pipe & Foundry Co., both of Lynchburg, Va., being mentioned in this connection. The plan was later abandoned. It was reported in March that the Lavino Furnace Co. might build a pipe plant adjacent to its Reusens, Va., blast furnace, but no action was taken. In the spring the McWane Cast Iron Pipe Co., Birmingham, added about 8800 sq. ft. of foundry space and later in the year made a further addition to its capacity. In Provo, Utah, the Pacific States Cast Iron Pipe Co. constructed a plant for 50 tons a day of soil and pressure pipe, operating under the McWane patents on pre-calked pressure pipe.

An important step was taken during the year in the naming of a committee by the American Engineering Standards Committee to unify the specifications on cast iron pipe, covering dimensions, pressure, ratings and manufacturing methods, including centrifugal casting.

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## Acquires Control of Oil Well Supply Co.

A group headed by J. H. Hillman, chairman Hillman Coal & Coke Co., has acquired control of the Oil Well Supply Co., a large distributer of oil and gas well pipe and supplies through the purchase of the stock of the estate of the late John Eaton. Mr. Hillman is a director of the A. M. Byers Co., Pittsburgh, maker of wrought iron pipe, but it is officially stated that this does not mean a merging of the two companies. The Youngstown Sheet & Tube Co., recently was reported to be negotiating for the Oil Well Supply Co., for the purpose of merging it with its own subsidiary, the Continental Supply Co.

The Oil Well Supply Co., which is capitalized at $22,000,000, was organized in 1862 and has plants for the manufacture of oil field equipment in Pittsburgh, Oil City, Pa., Oswego, N. Y., Bradford, Pa., Tulsa, Okla, Parkersburg, W. Va., Poplar Bluff, Mo., Tampico, Mexico, and Los Angeles. It maintains branches in centers of important oil and gas fields in the United States and Mexico and offices in London and Bucharest for European and Oriental trade.

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An order for a 400-ft. lake boat of the modern stone carrier type, to have a carrying capacity of about 7500 tons, has been placed with the Great Lakes Engineering Works, Detroit, by the Huron Transportation Co., Detroit.

# Iron and Steel Markets

## Lower Prices on Sheets and Strips

### Steel Mill Operations Close to December Average—Freight Cars Ordered in Two Weeks, 10,065—A Waiting Situation in Bars—Southern Pig Iron Active at $18

WITH no resumption of the free flow of business that marked the eighteen months preceding November, the steel mills have had in the past week some increase in number of orders, but individually they are small and mill scheduling is largely on a weekly basis. The Steel Corporation is producing ingots at a rate slightly better than its December average of 83 per cent and independent companies which were down to 60 per cent at their recent low point are now at 65 to 70 per cent.

As a whole the steel industry appears to interpret the present situation in the light of a delayed start on the new year, which, while in contrast with the larger activities of January of last year and 1925, is not significant of a definite drop in the rate of consumption.

On the general run of products the mills have lighter bookings than had been expected, and in the past week the efforts of some producers to increase their tonnages have brought out lower prices, notably in sheets and strips. In other lines the market has preserved for the most part the stability that has been seen for a good many months in bars, plates and shapes, though few bar mills are now operating at more than 60 per cent of capacity.

That the Steel Corporation's unfilled orders on Dec. 31 were 3,960,969 tons, or 153,522 tons more than on Nov. 30, naturally caused surprise, since no other important producer of steel could show a December increase. Both the corporation and the independents have light bookings in bars, the leading tonnage item in finished steel, and there was no December gain in plates, shapes and other heavy products. One explanation of the corporation's statement is that good-sized year-end specifications were entered on the American Can Co.'s tin plate contract taken some weeks ago.

With attention directed to the automobile industry and the rate at which it will soon be operating, it is significant that it has been the chief beneficiary of the sharp competition of the past week between sheets and wide strips. While automobile steel is now being ordered at a better rate than in November and December, important buying from that source is not looked for before Feb. 1.

Railroad and structural demand have been made more conspicuous in the past week by the waiting situation in bars.

Freight cars placed in the week have brought the total for the past fortnight to more than 10,000. The Santa Fe has closed for 2800, the Rock Island for 2500, the Northwestern Refrigerator Co. for 1020, and the Missouri Pacific has increased its 2000-car order of last week to 3120. Several small orders bring the total to 10,065. The Santa Fe has bought 25 locomotives and the Baltimore & Ohio, Central of New Jersey and the Reading are inquiring for locomotives. The Burlington and the Wabash have each inquired for 1000 freight cars.

The Pennsylvania Railroad will receive bids Jan. 18 on 18,000 tons of plates and 7000 tons of bars. Other products bring the total of its first quarter requirements close to 30,000 tons.

Several thousand tons of plates and shapes have been ordered of a Pittsburgh mill by a Chester, Pa., shipyard for an oil tanker, and a Detroit shipyard has an order for a lake boat requiring 3000 tons of steel. Dams on the lower Ohio call for 2200 tons of sheet piling.

On top of 50,000 tons in the preceding week, structural steel awards totaled about 60,000 tons. The larger lettings are 10,000 tons for a New York office building, 6000 tons for oil field work at Port Arthur, Tex., 5000 tons for a Masonic building at Providence, R. I., 4100 tons for a Chicago police station and 3500 tons for an office building in Los Angeles. New work totaling 21,000 tons includes 6500 tons for an athletic club in Chicago, 3800 tons for a railroad bridge in New Jersey and 3500 tons for an apartment building in Louisville, Ky.

For its 1927 requirements the Nickel Plate has placed 20,900 tons of rails with Pittsburgh and Chicago district mills.

As the recent weakness in wide hot-rolled strip steel became more pronounced, sales were made in the week at 2.15c. to 2.20c. Pittsburgh, on business carrying good extras. On strip narrower than 6 in. the market has declined $2 a ton or more from the December quotation of 2.50c., Pittsburgh.

Interest in pig iron has centered in the past week in the Southern market. Alabama and Tennessee producers unexpectedly reduced their price $2 a ton or to $18, Birmingham, and sales of 150,000 tons, including some large lots to pipe foundries, have resulted. Stimulation of buying by pipe companies rather than the desire to compete in Northern markets is the explanation given for the cut.

For the first time since February, 1925, Birmingham iron is quoted in the Cincinnati market below Ohio River iron. However, Lake Erie furnaces have sold at $20.90, Cincinnati, as against the present price of $21.69 for Alabama iron.

Japan has bought 57,000 base boxes of American tin plate for the Nippon Oil Co. and 14,000 boxes for the Kioto Oil Co.

Both of THE IRON AGE composite prices are lower this week, that for pig iron declining from $19.71 to $19.39 per ton and that for finished steel from 2.453c. to 2.439c. per lb. Pig iron is now lower than at any time during 1926—at the lowest point, in fact, since early September, 1925. Finished steel is at the level of four months ago.

# A Comparison of Prices

**Advances Over the Previous Week in Heavy Type, Declines in Italics**
**At Date, One Week, One Month, and One Year Previous**

## For Early Delivery

| Pig Iron, Per Gross Ton: | Jan. 11, 1927 | Jan. 4, 1927 | Dec. 14, 1926 | Jan. 12, 1926 |
|---|---|---|---|---|
| No. 2, fdy., Philadelphia | $22.26 | $22.26 | $22.76 | $23.76 |
| No. 2, Valley furnace | 18.50 | 18.50 | 19.00 | 20.50 |
| No. 2, Southern, Cin'ti | *21.69* | 23.69 | 23.69 | 25.69 |
| No. 2, Birmingham | *18.00* | 20.00 | 20.00 | 22.00 |
| No. 2 foundry, Chicago* | 21.00 | 21.00 | 21.00 | 23.00 |
| Basic, del'd eastern Pa. | 21.50 | 21.50 | 22.00 | 23.00 |
| Basic, Valley furnace | 18.00 | 18.00 | 18.50 | 20.00 |
| Valley Bessemer, del'd P'gh | 21.26 | 21.26 | 21.76 | 22.76 |
| Malleable, Chicago* | 21.00 | 21.00 | 21.00 | 23.00 |
| Malleable, Valley | 18.50 | 18.50 | 19.00 | 20.50 |
| Gray forge, Pittsburgh | 19.76 | 19.76 | 20.26 | 21.76 |
| L. S. charcoal, Chicago | 27.04 | 27.04 | 27.04 | 29.04 |
| Ferromanganese, furnace | 100.00 | 100.00 | 100.00 | 115.00 |
| **Rails, Billets, etc.,** Per Gross Ton: | | | | |
| O.-h. rails, heavy, at mill | $43.00 | $43.00 | $43.00 | $43.00 |
| Light rails at mill | 36.00 | 36.00 | 36.00 | 36.00 |
| Bess. billets, Pittsburgh | 35.00 | 35.00 | 35.00 | 35.00 |
| O.-h. billets, Pittsburgh | 35.00 | 35.00 | 35.00 | 35.00 |
| O.-h. sheet bars, P'gh | 36.00 | 36.00 | 36.00 | 36.00 |
| Forging billets, P'gh | 40.00 | 40.00 | 40.00 | 40.00 |
| O.-h. billets, Phila | 40.30 | 40.30 | 40.30 | 41.30 |
| Wire rods, Pittsburgh | 45.00 | 45.00 | 45.00 | 45.00 |
| | Cents | Cents | Cents | Cents |
| Skelp, grvd. steel, P'gh, lb. | 1.90 | 1.90 | 1.90 | 1.90 |
| **Finished Iron and Steel,** | | | | |
| *Per Lb. to Large Buyers:* | Cents | Cents | Cents | Cents |
| Iron bars, Philadelphia | 2.22 | 2.22 | 2.22 | 2.22 |
| Iron bars, Chicago | 2.00 | 2.00 | 2.00 | 2.00 |
| Steel bars, Pittsburgh | 2.00 | 2.00 | 2.00 | 2.00 |
| Steel bars, Chicago | 2.10 | 2.10 | 2.10 | 2.10 |
| Steel bars, New York | 2.34 | 2.34 | 2.34 | 2.34 |
| Tank plates, Pittsburgh | 1.90 | 1.90 | 1.90 | 1.90 |
| Tank plates, Chicago | 2.10 | 2.10 | 2.10 | 2.10 |
| Tank plates, New York | 2.24 | 2.24 | 2.24 | 2.09 |
| Beams, Pittsburgh | 2.00 | 2.00 | 2.00 | 1.90 |
| Beams, Chicago | 2.10 | 2.10 | 2.10 | 2.10 |
| Beams, New York | 2.34 | 2.34 | 2.34 | 2.24 |
| Steel hoops, Pittsburgh | *2.30* | 2.50 | 2.50 | 2.50 |

*The average switching charge for delivery to foundries in the Chicago district is 61c. per ton.

| Sheets, Nails and Wire, | Jan. 11, 1927 | Jan. 4, 1927 | Dec. 14, 1926 | Jan. 12, 1926 |
|---|---|---|---|---|
| *Per Lb. to Large Buyers:* | Cents | Cents | Cents | Cents |
| Sheets, black, No. 24, P'gh | *2.90* | 3.00 | 3.00 | 3.20 |
| Sheets, black, No. 24, Chicago dist. mill | 3.20 | 3.20 | 3.20 | 3.30 |
| Sheets, galv., No. 24, P'gh | *3.75* | 3.85 | 3.85 | 4.15 |
| Sheets, galv., No. 24, Chicago dist. mill | *3.95* | 4.05 | 4.05 | 4.25 |
| Sheets, blue, 9 & 10, P'gh | *2.25* | 2.30 | 2.30 | 2.50 |
| Sheets, blue, 9 & 10, Chicago dist. mill | 2.50 | 2.50 | 2.50 | 2.60 |
| Wire nails, Pittsburgh | 2.65 | 2.65 | 2.65 | 2.65 |
| Wire nails, Chicago dist. mill | 2.70 | 2.70 | 2.70 | 2.70 |
| Plain wire, Pittsburgh | 2.50 | 2.50 | 2.50 | 2.50 |
| Plain wire, Chicago dist. mill | 2.55 | 2.55 | 2.55 | 2.55 |
| Barbed wire, galv., P'gh | 3.35 | 3.35 | 3.35 | 3.35 |
| Barbed wire, galv., Chicago dist. mill | 3.40 | 3.40 | 3.40 | 3.40 |
| Tin plate, 100 lb. box, P'gh | $5.50 | $5.50 | $5.50 | $5.50 |
| **Old Material,** Per Gross Ton: | | | | |
| Carwheels, Chicago | **$15.25** | $15.00 | $14.50 | $18.00 |
| Carwheels, Philadelphia | 16.50 | 16.50 | 16.50 | 18.50 |
| Heavy melting steel, P'gh. | 17.00 | 17.00 | 17.00 | 19.00 |
| Heavy melting steel, Phila. | 15.50 | 15.50 | 15.50 | 17.50 |
| Heavy melting steel, Ch'go | **13.25** | 13.00 | 13.00 | 15.25 |
| No. 1 cast, Pittsburgh | 16.00 | 16.00 | 16.00 | 17.50 |
| No. 1 cast, Philadelphia | 17.00 | 17.00 | 17.00 | 18.50 |
| No. 1 cast, Ch'go (net ton) | 16.50 | 16.50 | 16.00 | 17.00 |
| No. 1 RR. wrot., Phila. | 17.00 | 17.00 | 17.00 | 18.50 |
| No. 1 RR. wrot., Ch'go (net) | **12.50** | 12.00 | 12.00 | 13.50 |
| **Coke, Connellsville,** Per Net Ton at Oven: | | | | |
| Furnace coke, prompt | *$3.50* | $3.75 | $3.50 | $6.00 |
| Foundry coke, prompt | 4.50 | 4.50 | 4.50 | 6.50 |
| **Metals,** | Jan. 11, 1927 | Jan. 3, 1927 | Dec. 27, 1926 | Jan. 12, 1926 |
| *Per Lb. to Large Buyers:* | Cents | Cents | Cents | Cents |
| Lake copper, New York | *13.25* | 13.50 | 13.75 | 14.25 |
| Electrolytic copper, refinery | 13.00 | 13.00 | 13.37½ | 13.87½ |
| Zinc, St. Louis | *6.85* | 6.97½ | 7.05 | 8.70 |
| Zinc, New York | *7.20* | 7.32½ | 7.40 | 9.05 |
| Lead, St. Louis | 7.47½ | 7.62½ | 7.70 | 9.00 |
| Lead, New York | *7.65* | 7.80 | 7.90 | 9.25 |
| Tin (Straits), New York | *66.87½* | 67.50 | 68.62½ | 62.75 |
| Antimony (Asiatic), N. Y. | **14.00** | 13.00 | 13.00 | 24.25 |

On export business there are frequent variations from the above prices. Also, in domestic business, there is at times a range of prices on various products, as shown in our market reports on other pages.

# Pittsburgh

## Steel Buying Disappointing—Market Breaks in Sheets and Hot Strips

PITTSBURGH, Jan. 11.—The steel business is still somewhat disappointing in that so far this year there has not been a resumption of the free flow of orders that marked the 18 months ended last October. While bookings have been more numerous this month than in December, they are individually small, and mill scheduling is largely on a weekly basis. Tin plate and rails stand out as exceptions, because there is no doubt about the year's probable consumption in those lines, such as there is regarding most other steel products. As against order books in rails and tin plate that will engage capacity rather fully for the next four months at least, stand rather slim obligations in the forms of finished steel that formerly were largely sold on a quarterly basis.

But a more important development of the new year than the slow start, which may possibly be overcome later, is the evidence, notably in sheets and strips, that manufacturers have become disturbed over the dullness to the extent of cutting prices. Some very low prices have been made in the past week on desirable orders for hot-rolled strips, and in the disappointment over the loss of these orders others have extended the shading to the smaller lots. There has been a dip of at least $2 a ton in sheet prices from what hitherto have been regarded as the minimum prices, and blue annealed sheets have gone off even more than that because of the direct competition from the new product, strip sheets.

In other directions the market has preserved a good measure of steadiness. The battle line of prices has been broken at a rather vital point, however, with the automotive industry getting the benefit. That industry has been taking more steel this month than it did last month or the month before, but has not been expanding production or consumption to the extent that was expected in the closing months of last year. Moreover, those in touch with the situation do not look for real buying from that source before Feb. 1. Parts makers have orders for February and March delivery, but cannot very well start production before the releases are received. Reports that the motor car builders are increasing output are to be taken with reserve. Other consuming industries are yet to move toward the stride they will probably reach as the weather becomes more open.

There having been no recession in steel plant operations, it is patent that the industry as a whole regards the situation in the light of merely a delayed start of a new year rather than one of a permanently lower rate of consumption and output. A careful checkup indicates an ingot production for this and nearby districts of 70 per cent of capacity, and all steel works blast furnaces in production a week ago are still producing.

No reduction of wages has yet been made in the

western Pennsylvania mines and coke plants except by producers of a lower grade fuel, who simply cannot get a price that justifies more than the November, 1917, wage scale, which is about one-third less than the union scale. The coke moving to merchant blast furnaces is at prices based on the higher scale, but with a real demand for iron lacking, it is impossible for iron makers to get assistance from consumers in carrying this burden and the pig iron market is not strong at present levels. Spot coke is slightly easier this week, due to the development of a surplus in the hands of one producer who had expected to be shipping against a contract by this time.

**Pig Iron.**—A few fair-sized sales of foundry iron recently were closed, a Greensburg, Pa., melter having taken 4500 tons, while 7000 tons were taken by a radiator manufacturer for plants at New Castle and Johnstown, Pa. Added to the takings of the large sanitary ware company last year and allowing for the regular coverage of small consumers, the movement probably has amounted to approximately 50,000 tons, constituting a comparatively brief campaign for the productive capacity now active. All this business has been closed at $18.50, Valley furnace, and that is now the quotable price, since efforts appear to have been abandoned to secure more. The Westinghouse Air Brake Co. is inquiring for 500 to 1000 tons of No. 3 foundry iron, but otherwise new business amounts to little. No interest at all is noted in basic iron. Valley furnaces are still quoting $18.50, but $18 appears to be as much as can be obtained and even that price is regarded as high in view of the fact that there are steel companies in the district that have surplus production and have freight charges to consuming points well below those from the Valley. One sale of 500 tons of Bessemer iron is noted at $19.50, and the market appears well established at that figure. The Cherry Valley furnace, Leetonia, Ohio, was recently blown in.

We quote Valley furnace, the freight for delivery to the Cleveland or Pittsburgh district being $1.76 per gross ton:

| | |
|---|---|
| Basic | $18.00 to $18.50 |
| Bessemer | 19.50 |
| Gray forge | 18.00 |
| No. 2 foundry | 18.50 |
| No. 3 foundry | 18.00 |
| Malleable | 18.50 |
| Low phosphorus, copper free | 28.00 |

**Ferroalloys.**—Business has become largely a matter of specifications against contracts in the more commonly used ferroalloys, as important consumers are fairly well covered against their first half requirements of ferromanganese and spiegeleisen, and for all of this year on high grade ferrosilicon. A contract calling for 400 tons of 19 to 21 per cent spiegeleisen for delivery during the first half was closed in the past week at $34, furnace. Single carloads are still quoted at $37. Ferromanganese is quoted at $100, Atlantic seaboard, and 50 per cent ferrosilicon at $85.

**Semi-Finished Steel.**—Non-integrated steel makers still are disposed to refrain from the former method of contracting by quarterly periods and to continue to buy in keeping with what their orders for finished material suggest. The sheet and strip markets are far from active in spite of the low prices that now are being named on those products, and the call for billets, slabs and sheet bars is light. There is increasing pressure on the makers of semi-finished steel for lower prices but not much evidence of success in that direction. At the same time, it is not denied that $36, Pittsburgh or Youngstown, on sheet bars and small billets and slabs, and $35, for large billets and slabs, are bases for settlement rather than the actual invoice prices on tonnages moving from producing mills to consumers who are regarded as regular sources of outlet. Not much activity is noted in skelp or in wire rods.

**Steel and Iron Bars.**—Orders for steel bars are fairly numerous but individually small, and mills in this and nearby districts are starting the new year with fewer and smaller first quarter contracts than they had at the beginning of 1926. Big consuming industries, such as cold-finished steel bar makers, bolt and nut manufacturers and automobile builders, are still operating at a low rate, and with no suggestions of higher prices or that tonnages will not be available in quantity as wanted, the incentive to large forward commitments is lacking. The ordinary tonnage price of 2c., base Pittsburgh, is holding. The Cleveland situation is disturbing, but local mills still refrain from meeting it. Iron bars are dull.

**Structural Steel.**—There is a fair amount of first quarter contracting, and current demands are fairly numerous and somewhat heavier than they were in December. The ordinary tonnage price remains at 2c., base Pittsburgh. Structural shops in this district are starting the new year with considerably less business on their books than a year ago, but this fact is not regarded as unfavorable, as there was much tonnage on order at this time last year that was for deferred shipment.

**Plates.**—In this district there is not much of a gap between orders and the productive capacity that can be operated profitably at today's price. There is not much railroad car business, but tanks, river barges and large outside-diameter pipe are taking much steel and the small plate fabricators are reasonably busy. A fair amount of first quarter contracting is noted, in addition to current demands, and delivery promises run to three weeks in some sizes, as against a week or less in almost all sizes of bars. The market is still quotable at 1.90c., base Pittsburgh.

**Wire Products.**—The best that can be said of business is that it is meeting expectations, since there is plenty of productive capacity to take care of all requirements easily and promptly and jobbers and manufacturing consumers do not have to anticipate their needs because of a possibility of a change in prices. Orders are coming along steadily for small lots, and these are being supplied by a mill operation of about 50 to 55 per cent of capacity, supplemented by mill warehouse stocks. Prices are steady.

**Rails and Track Supplies.**—The movement of standard-section rails on contracts is as good as it ever is at this time of year, which is a little early for the roads to do much track-laying. Accessories are not yet mov-

## THE IRON AGE Composite Prices

### Finished Steel

Jan. 11, 1927, 2.439c. Per Lb.

| | |
|---|---|
| One week ago | 2.453c. |
| One month ago | 2.453c. |
| One year ago | 2.453c. |
| 10-year pre-war average | 1.689c. |

Based on steel bars, beams, tank plates, plain wire, open-hearth rails, black pipe and black sheets. These products constitute 87 per cent of the United States output of finished steel.

| | High | | Low | |
|---|---|---|---|---|
| *1926* | 2.453c., | Jan. 5; | 2.403c., | May 18 |
| *1925* | 2.560c., | Jan. 6; | 2.396c., | Aug. 18 |
| *1924* | 2.789c., | Jan. 15; | 2.460c., | Oct. 14 |
| *1923* | 2.824c., | April 24; | 2.446c., | Jan. 2 |

### Pig Iron

Jan. 11, 1927, $19.39 Per Gross Ton

| | |
|---|---|
| One week ago | $19.71 |
| One month ago | 19.96 |
| One year ago | 21.79 |
| 10-year pre-war average | 15.72 |

Based on average of basic iron at Valley furnace and foundry irons at Chicago, Philadelphia, Buffalo, Valley and Birmingham.

| | High | | Low | |
|---|---|---|---|---|
| *1926* | $21.54, | Jan. 5; | $19.46, | July 13 |
| *1925* | 22.50, | Jan. 13; | 18.96, | July 7 |
| *1924* | 22.88, | Feb. 26; | 19.21, | Nov. 3 |
| *1923* | 30.86, | March 20; | 20.77, | Nov. 20 |

# Mill Prices of Finished Iron and Steel Products

## Iron and Steel Bars

*Soft Steel*

| | Base Per Lb. |
|---|---|
| F.o.b. Pittsburgh mills | 2.00c. |
| F.o.b. Chicago | 2.10c. |
| Del'd Philadelphia | 2.32c. |
| Del'd New York | 2.34c. |
| Del'd Cleveland | 2.19c. |
| F.o.b. Cleveland, sizes up to 1-in. rounds | 2.00c. |
| F.o.b. Birmingham | 2.15c. to 2.25c. |
| C.i.f. Pacific ports | 2.35c. |
| F.o.b. San Francisco mills | 2.35c. to 2.40c. |

*Billet Steel Reinforcing*

| | |
|---|---|
| F.o.b. Pittsburgh mills | 2.00c. |

*Rail Steel*

| | |
|---|---|
| F.o.b. mill | 1.80c. to 1.90c. |
| F.o.b. Chicago | 1.90c. to 2.00c. |

*Iron*

| | |
|---|---|
| Common iron, f.o.b. Chicago | 2.00c. |
| Refined iron, f.o.b. P'gh mills | 2.90c. to 3.00c. |
| Common iron, del'd Philadelphia | 2.22c. |
| Common iron, del'd New York | 2.24c. |

## Tank Plates

| | Base Per Lb. |
|---|---|
| F.o.b. Pittsburgh mill | 1.90c. |
| F.o.b. Chicago | 2.10c. |
| F.o.b. Birmingham | 2.05c. to 2.15c. |
| Del'd Cleveland | 2.09c. |
| Del'd Philadelphia | 2.22c. |
| Del'd New York | 2.24c. |
| C.i.f. Pacific ports | 2.30c. |

## Structural Shapes

| | Base Per Lb. |
|---|---|
| F.o.b. Pittsburgh mills | 2.00c. |
| F.o.b. Chicago | 2.10c. |
| F.o.b. Birmingham | 2.15c. to 2.25c. |
| Del'd Cleveland | 2.19c. |
| Del'd Philadelphia | 2.17c. to 2.32c. |
| Del'd New York | 2.24c. to 2.34c. |
| C.i.f. Pacific ports | 2.35c. |

## Hot-Rolled Flats (Hoops, Bands and Strips)

| | Base Per Lb. |
|---|---|
| All gages, narrower than 6 in., P'gh | 2.30c. to 2.40c. |
| All gages, 6 in. and wider, P'gh | 2.15c. to 2.30c. |
| All gages, narrower than 6 in., Chicago | 2.50c. to 2.60c. |
| All gages, 6 in. and wider, Chicago | 2.50c. |

## Cold-Finished Steel

| | Base Per Lb. |
|---|---|
| Bars, f.o.b. Pittsburgh mills | 2.30c. to 2.40c. |
| Bars, f.o.b. Chicago | 2.40c. |
| Bars, Cleveland | 2.45c. |
| Shafting, ground, f.o.b. mill | *2.55c. to 3.00c. |
| Strips, f.o.b. Pittsburgh mills | 3.00c. to 3.40c. |
| Strips, f.o.b. Cleveland mills | 3.00c. to 3.40c. |
| Strips, delivered Chicago | 3.30c. to 3.70c. |
| Strips, f.o.b. Worcester mills | 3.75c. |

*According to size.

## Wire Products

(To jobbers in car lots, f.o.b. Pittsburgh and Cleveland)

| | Base Per Keg |
|---|---|
| Wire nails | $2.65 |
| Galv'd nails, 1-in. and longer | 4.65 |
| Galv'd nails, shorter than 1-in | 4.90 |
| Galvanized staples | 3.35 |
| Polished staples | 3.10 |
| Cement coated nails | 2.65 |

| | Base Per 100 Lb. |
|---|---|
| Bright plain wire, No. 9 gage | $2.50 |
| Annealed fence wire | 2.65 |
| Spring wire | 3.50 |
| Galv'd wire, No. 9 | 3.10 |
| Barbed wire, galv'd | 3.35 |
| Barbed wire, painted | 3.10 |

Chicago district mill and delivered Chicago prices are $1 per ton above the foregoing. Birmingham mill prices $3 a ton higher; Worcester, Mass., mill $3 a ton higher on production of that plant; Duluth, Minn., mill $2 a ton higher; Anderson, Ind., $1 higher.

*Woven Wire Fence*

| | Base to Retailers Per Net Ton |
|---|---|
| F.o.b. Pittsburgh | $65.00 |
| F.o.b. Cleveland | 65.00 |
| F.o.b. Anderson, Ind. | 66.00 |
| F.o.b. Chicago district mills | 67.00 |
| F.o.b. Duluth | 68.00 |
| F.o.b. Birmingham | 68.00 |

## Sheets

*Blue Annealed*

| | Base Per Lb. |
|---|---|
| Nos. 9 and 10, f.o.b. Pittsburgh | 2.15c. to 2.30c. |
| Nos. 9 and 10, f.o.b. Ch'go dist. mill | 2.50c. |
| Nos. 9 and 10, del'd Philadelphia | 2.52c. to 2.62c. |
| Nos. 9 and 10, f.o.b. Birmingham | 2.60c. to 2.70c. |

*Box Annealed, One Pass Cold Rolled*

| | |
|---|---|
| No. 24, f.o.b. Pittsburgh | 2.80c. to 2.90c. |
| No. 24, f.o.b. Ch'go dist. mill | 3.20c. |
| No. 24, del'd Philadelphia | 3.12c. to 3.22c. |
| No. 24, f.o.b. Birmingham | 3.30c. to 3.40c. |

*Metal Furniture Sheets*

| | |
|---|---|
| No. 24, f.o.b. Pittsburgh, A grade | 4.05c. to 4.15c. |
| No. 24, f.o.b. Pittsburgh, B grade | 3.90c. to 4.00c. |

*Galvanized*

| | |
|---|---|
| No. 24, f.o.b. Pittsburgh | 3.75c. to 3.85c. |
| No. 24, f.o.b. Chicago dist. mill | 3.95c. to 4.05c. |
| No. 24, del'd Philadelphia | 4.07c. to 4.17c. |
| No. 24, f.o.b. Birmingham | 4.20c. to 4.30c. |

*Tin Mill Black Plate*

| | |
|---|---|
| No. 28, f.o.b. Pittsburgh | 3.10c. to 3.15c. |
| No. 28, f.o.b. Chicago dist. mill | 3.25c. to 3.35c. |

*Automobile Body Sheets*

| | |
|---|---|
| No. 20, f.o.b. Pittsburgh | 4.15c. to 4.25c. |

*Long Ternes*

| | |
|---|---|
| No. 24, 8-lb. coating, f.o.b. mill | 4.30c. |

## Tin Plate

| | Per Base Box |
|---|---|
| Standard cokes, f.o.b. P'gh district mills | $5.50 |
| Standard cokes, f.o.b. Gary and Elwood, Ind. | 5.60 |

## Terne Plate

(*F.o.b. Morgantown or Pittsburgh*)

(Per package, 20 x 28 in.)

| | | | |
|---|---|---|---|
| 8-lb. coating, 100 lb. base | $11.40 | 20-lb. coating I.C. | $16.20 |
| 8-lb. coating I.C. | 11.70 | 25-lb. coating I.C. | 17.90 |
| 15-lb. coating I.C. | 14.85 | 30-lb. coating I.C. | 19.45 |
| | | 40-lb. coating I.C. | 21.65 |

## Alloy Steel Bars

(F.o.b. Pittsburgh or Chicago)

| S. A. E. Series Numbers | | Base Per 100 Lb. |
|---|---|---|
| 2100* | (1½% Nickel, 0.10% to 0.20% Carbon) | $3.20 to $3.25 |
| 2300 | (3½% Nickel) | 4.30 to 4.50 |
| 2500 | (5% Nickel) | 5.50 to 5.65 |
| 3100 | (Nickel Chromium) | 3.30 to 3.50 |
| 3200 | (Nickel Chromium) | 5.00 to 5.25 |
| 3300 | (Nickel Chromium) | 7.00 to 7.25 |
| 3400 | (Nickel Chromium) | 6.25 to 6.50 |
| 5100 | (Chromium Steel) | 3.40 to 3.50 |
| 5200* | (Chromium Steel) | 7.00 to 7.50 |
| 6100 | (Chrom. Vanadium bars) | 4.20 to 4.30 |
| 6100 | (Chrom. Vanad. spring steel) | 3.80 |
| 9250 | (Silicon Manganese spring steel) | 3.20 to 3.25 |
| | Carbon Vanadium (0.45% to 0.55% Carbon, 0.15% Vanad.) | 4.10 to 4.20 |
| | Nickel Chrome Vanadium (0.60 Nickel, 0.50 Chrom., 0.15 Vanad.) | 4.30 |
| | Chromium Molybdenum bars (0.80—1.10 Chrom., 0.25—0.40 Molyb.) | 4.25 to 4.35 |
| | Chromium Molybdenum bars (0.50—0.70 Chrom., 0.15—0.25 Molyb.) | 3.40 to 3.50 |
| | Chromium Molybdenum spring steel (1—1.25 Chrom., 0.30—0.50 Molybdenum) | 4.50 to 4.75 |

Above prices are for hot-rolled steel bars, forging quality. The ordinary differential for cold-drawn bars is 1c. per lb. higher. For billets 4 x 4 to 10 x 10 in. the price for a gross ton is the net price for bars of the same analysis. For billets under 4 x 4 in. down to and including 2½-in. squares, the price is $5 a gross ton above the 4 x 4 billet price.

*Not S. A. E. specifications, but numbered by manufacturers to conform to S. A. E. system.

## Rails

| | Per Gross Ton |
|---|---|
| Standard, f.o.b. mill | $43.00 |
| Light (from billets), f.o.b. mill | 36.00 |
| Light (from rail steel), f.o.b. mill | 34.00 |
| Light (from billets), f.o.b. Ch'go mill | $36.00 to 38.00 |

## Track Equipment

(F.o.b. Mill)

| | Base Per 100 Lb. |
|---|---|
| Spikes, ⅝ in. and larger | $2.80 to $3.00 |
| Spikes, ½ in. and smaller | 2.90 to 3.25 |
| Spikes, boat and barge | 3.25 |
| Track bolts, all sizes | 3.90 to 4.50 |
| Tie plates, steel | 2.35 |
| Angle bars | 2.75 |

## Welded Pipe

**Base Discounts, f.o.b. Pittsburgh District and Lorain, Ohio, Mills**

*Butt Weld*

| Steel Inches | Black | Galv. | Iron Inches | Black | Galv. |
|---|---|---|---|---|---|
| ⅛ | 45 | 19½ | ⅛ to ⅜ | +11 | +39 |
| ¼ to ⅜ | 51 | 25½ | ½ | 22 | 2 |
| ½ | 56 | 42½ | ¾ | 28 | 11 |
| ¾ | 60 | 48½ | 1 to 1½ | 30 | 12 |
| 1 to 3 | 62 | 50½ | | | |

*Lap Weld*

| | | | | | |
|---|---|---|---|---|---|
| 2 | 55 | 43½ | 2 | 23 | 7 |
| 2½ to 6 | 59 | 47½ | 2½ | 26 | 11 |
| 7 and 8 | 56 | 43½ | 3 to 6 | 28 | 13 |
| 9 and 10 | 54 | 41½ | 7 to 12 | 26 | 11 |
| 11 and 12 | 53 | 40½ | | | |

*Butt Weld, extra strong, plain ends*

| | | | | | |
|---|---|---|---|---|---|
| ⅛ | 41 | 24½ | ¼ to ⅜ | +19 | +54 |
| ¼ to ⅜ | 47 | 30½ | ½ | 21 | 7 |
| ½ | 53 | 42½ | ¾ | 28 | 12 |
| ¾ | 58 | 47½ | 1 to 1½ | 30 | 14 |
| 1 to 1½ | 60 | 49½ | | | |
| 2 to 3 | 61 | 50½ | | | |

*Lap Weld, extra strong, plain ends*

| | | | | | |
|---|---|---|---|---|---|
| 2 | 53 | 42½ | 2 | 23 | 9 |
| 2½ to 4 | 57 | 46½ | 2½ to 4 | 29 | 15 |
| 4½ to 6 | 56 | 45½ | 4½ to 6 | 28 | 14 |
| 7 to 8 | 52 | 39½ | 7 to 8 | 21 | 7 |
| 9 and 10 | 45 | 32½ | 9 to 12 | 16 | 2 |
| 11 and 12 | 44 | 31½ | | | |

To the large jobbing trade the above discounts on steel pipe are increased on black by one point, with supplementary discount of 5%, and on galvanized by 1½ points, with supplementary discount of 5%. On iron pipe, both black and galvanized, the above discounts are increased to large jobbers by one point with supplementary discounts of 5 and 2½%.

Note.—Chicago district mills have a base two points less than the above discounts. Chicago delivered base is 2½ points less. Freight is figured from Pittsburgh, Lorain, Ohio, and Chicago district mills, the billing being from the point producing the lowest price to destination.

## Boiler Tubes

**Base Discounts, f.o.b. Pittsburgh**

| Lap Welded Steel | | Charcoal Iron | |
|---|---|---|---|
| 2 to 2¼ in. | 27 | 1½ in. | +18 |
| 2½ to 2¾ in. | 37 | 1¾ to 1⅞ in. | + 8 |
| 3 in. | 40 | 2 to 2¼ in. | — 2 |
| 3¼ to 3¾ in. | 42½ | 2½ to 3 in. | — 7 |
| 4 to 13 in. | 46 | 3¼ to 4¼ in. | — 9 |

Beyond the above discounts, 5 to 7 fives extra are given on lap welded steel tubes and 2 tens to 2 tens and 1 five on charcoal iron tubes.

*Standard Commercial Seamless Boiler Tubes*

*Cold Drawn*

| | | | |
|---|---|---|---|
| 1 in. | 60 | 3 in. | 45 |
| 1¼ to 1½ in. | 52 | 3¼ to 3½ in. | 47 |
| 1¾ in. | 36 | 4 in. | 50 |
| 2 to 2¼ in. | 31 | 4½, 5 and 6 in. | 45 |
| 2½ to 2¾ in. | 39 | | |

*Hot Rolled*

| | | | |
|---|---|---|---|
| 2 and 2¼ in. | 34 | 3¼ and 3½ in. | 50 |
| 2½ and 2¾ in. | 42 | 4 in. | 53 |
| 3 in. | 48 | 4½, 5 and 6 in. | 48 |

Less carloads, 4 points less. Add $8 per net ton for more than four gages heavier than standard. No extra for lengths up to and including 24 ft. Sizes smaller than 1 in. and lighter than standard gage to be held at mechanical tubes list and discount. Intermediate sizes and gages not listed take price of next larger outside diameter and heavier gage.

## Seamless Mechanical Tubing

| | Per Cent Off List |
|---|---|
| Carbon, 0.10% to 0.30%, base | 55 |
| Carbon, 0.30% to 0.40%, base | 50 |

Plus differentials for lengths over 18 ft. and for commercially exact lengths. Warehouse discounts on small lots are less than the above.

ing with much freedom, but that is to be expected, as the roads do not take out spikes, bolts and tie plates until they are ready to use them. Some rather good-sized contracts for light-section rails are reported from the coal mining companies, and nothing less than $36, base Pittsburgh, on billet rails is noted even on the largest of them.

**Tubular Goods.**—Orders this month are a little more frequent than they were in December, but individually they are small and insufficient in the aggregate to bring about any quickening of mill operations. This branch of the industry is operating between 65 and 70 per cent of capacity, but it is a question whether more of the production is going into stock or into consumption. This is not ordinarily a period of heavy consumption, and it is noted that shipments to oil country warehouses are large. Prices are holding well, but productive capacity has increased rather rapidly in the past few years and is now more than ample for the country's full requirements.

**Sheets.**—Continued paucity of buying is telling on the price ideas of the manufacturers. From the East comes word of sales of the common finishes at prices $2 to $3 a ton under what have been hitherto regarded as the minimum prices, while there has been a definite decline of $2 a ton in automobile body sheets and sheets for automobile fenders have encountered some very stiff competition from the new product—strip sheets—which have been quoted at the equivalent of 3.80c., base, for No. 20 gage automobile body sheets. Several sales of automobile body sheets are reported at 4.15c., base, for No. 20 gage, and that becomes the quotable price since no more than that is now being asked by any of the makers. Mills in this immediate area are still trying to get 3c., base Pittsburgh, for black, 3.85c., base, for galvanized and 2.30c., base, for blue annealed, but while a little business is being done within the favorable freight rate zone at these levels, they are rapidly becoming asking prices. At 2.90c., base, for No. 24 gage black sheets, now the ruling price, the price of No. 28 gage is 3.15c., or at the same level as when the gage differentials were changed last September. Galvanized sheets at 3.75c., base, for No. 24 gage, means 4.25c. for No. 28 gage, also the price before change in the gage differentials. For No. 16 gage black sheets, however, 2.90c., base, produces under the present card a price of 2.60c., while at 3.15c. for No. 28 gage and the old differentials, the price of No. 16 gage was 2.80c. Prices are given on page 173.

**Tin Plate.**—Container manufacturers are taking out tonnages against contracts steadily, and mill operations are virtually at full physical capacity.

**Cold-Finished Steel Bars and Shafting.**—There has not been nearly as much of a resumption of automobile production as might be gathered from press reports, and while there is fairly steady ordering of cold-finished steel bars from parts makers, the individual specifications are small. The ordinary tonnage price of the 2.40c., base Pittsburgh, is holding well.

**Hot-Rolled Flats**—Some large-lot sales at low prices have unsettled the market. Mills anxious for a few desirable orders, in some cases, have quoted net prices that, when translated into terms of base prices, have shown a steep decline from what has been hitherto regarded as the market. Large producers have taken considerable contract business from small-lot buyers at 2.40c. and 2.50c., base Pittsburgh, for narrow material and 2.20c. to 2.30c. for stock 6 in. and wider, but in the past few days, the market has settled to 2.10c., base, for wide and 2.30c. to 2.35c., base, for narrow stock. The General Motors Corporation is experimentally equipping one of its line of cars with rubber-surfaced steel running boards and, if this is successful, will put them on all of its cars. This requirement calls for No. 16 gage steel, 36 in. wide, and would mean roughly about 500 tons weekly.

**Cold-Rolled Strips.**—It seems that with some betterment in business, prices have grown weaker. Many makers are still quoting the graduated price schedule calling for 3.40c., base Pittsburgh, for lots of 1 to 3 tons and producing a price of 3c. for lots of 50 tons or more, but on actual tests of large tonnage not much attention has been paid to this schedule. On small-lot tonnage 3.25c., base, has been done, while on one sizable tonnage for shipment to Detroit the price was 2.85c., base. This indicates a drop of $3 a ton.

**Bolts, Nuts and Rivets.**—The feature of the market in bolts and nuts is its firmness rather than its activity. Buying is steady, but not of sufficient volume to provide much more than a 50 per cent operation. The rivet market is still weak.

**Coke and Coal.**—The spot furnace coke market is slightly weaker again this week. Some of the small producers have succeeded in getting wages down and, having no regular consuming connections, have found it necessary to pass on the saving. Another factor in a drop of 25c. per ton in standard furnace coke is that one producer with a contract from a furnace company that had planned to go in about this time had a suspension of shipments and found it necessary to find an outlet for the surplus. Spot foundry coke is holding at recent prices. The coal market is not showing the activity that was expected and prices are still weak. There are two schools of thought in connection with the wage scales. The larger operators in the non-union districts still incline to the belief that to cut wages would only be an invitation for future trouble by providing the miners' union with ammunition to get the men out in April, while the smaller producers are anxious for a reduction since they cannot sell coal profitably at the higher scale and do not want to shut down.

**Old Material.**—Consumer interest in the market is still absent except for a little more willingness to accept shipments against old orders, but the market shows a firm undertone, as not much scrap is coming on the market. More than the present ruling market price was paid for the heavy melting steel in the January list of the Pennsylvania Railroad; dealers still have some orders carrying $17.50 to $18 that they have not completed, which explains this incongruity.

**Warehouse Prices, f.o.b. Pittsburgh**

| | Base per Lb. |
|---|---|
| Tank plates | 3.00c. |
| Structural shapes | 3.00c. |
| Soft steel bars and small shapes | 2.90c. |
| Reinforcing steel bars | 2.90c. |
| Black sheets (No. 24 gage), 25 or more bundles | 3.95c. |
| Galvanized sheets (No. 24 gage), 25 or more bundles | 4.70c. |
| Blue annealed sheets (No. 10 gage), 25 or more sheets | 3.40c. |
| Cold-finished shafting and screw stock— | |
| Rounds and hexagons | 3.60c. |
| Squares and flats | 4.10c. |
| Bands | 3.60c. |
| Spikes, large | 3.30c. |
| Small | 3.80c. to 5.25c. |
| Boat | 3.80c. |
| Bolts, track | 4.90c. |
| Wire, black soft annealed, base per 100 lb. | $3.00 |
| Wire, galvanized soft, base per 100 lb. | 3.00 |
| Common wire nails, per keg | 3.00 |
| Cement coated nails, per keg | 3.05 |

We quote for delivery to consumers' yards in the Pittsburgh and other districts taking the Pittsburgh freight rate as follows:

| | *Per Gross Ton* |
|---|---|
| Heavy melting steel | $16.75 to $17.00 |
| Scrap rails | 16.00 to 16.50 |
| No. 1 cast, cupola size | 16.00 to 16.50 |
| Compressed sheet steel | 15.50 to 16.00 |
| Bundled sheets, sides and ends | 14.50 to 15.00 |
| Railroad knuckles and couplers | 18.50 to 19.00 |
| Railroad coil and leaf springs | 18.50 to 19.00 |
| Low phosphorus blooms and billet ends | 21.00 to 21.50 |
| Low phosphorus mill plates | 20.50 to 21.00 |
| Low phosphorus, light grade | 17.50 to 18.00 |
| Low phosphorus punchings | 18.50 to 19.00 |
| Steel car axles | 21.50 to 22.00 |
| Cast iron wheels | 16.00 to 16.50 |
| Rolled steel wheels | 18.50 to 19.00 |
| Machine shop turnings | 12.00 to 12.50 |
| Short shoveling steel turnings | 13.00 to 13.50 |
| Sheet bar crops | 17.00 to 17.50 |
| Heavy steel axle turnings | 15.00 to 15.50 |
| Short mixed borings and turnings | 12.50 to 13.00 |
| Heavy breakable cast | 15.00 to 15.50 |
| Cast iron borings | 12.50 to 13.00 |
| No. 1 railroad wrought | 13.00 to 13.50 |
| No. 2 railroad wrought | 16.75 to 17.25 |
| Railroad or automobile malleable scrap | 16.50 to 17.00 |

# Semi-Finished Steel, Raw Materials, Bolts and Rivets

## Mill Prices of Semi-Finished Steel

**F.o.b. Pittsburgh or Youngstown**

### Billets and Blooms

| | *Per Gross Ton* |
|---|---|
| Rerolling, 4-in. and over | $35.00 |
| Rerolling, under 4-in. to and including 1¾-in. | 36.00 |
| Forging, ordinary | 40.00 |
| Forging, guaranteed | 45.00 |

### Sheet Bars

| | *Per Gross Ton* |
|---|---|
| Open hearth or Bessemer | $36.00 |

### Slabs

| | *Per Gross Ton* |
|---|---|
| 8 in. x 2 in. and larger | $35.00 |
| Smaller than 8 in. x 2 in. | 36.00 |

### Skelp

| | *Per Lb.* |
|---|---|
| Grooved | 1.90c. |
| Sheared | 1.90c. |
| Universal | 1.90c. |

### Wire Rods

| | *Per Gross Ton* |
|---|---|
| *Common soft, base | $45.00 |
| Screw stock | $5.00 per ton over base |
| Carbon 0.20% to 0.40% | 3.00 per ton over base |
| Carbon 0.41% to 0.55% | 5.00 per ton over base |
| Carbon 0.56% to 0.75% | 7.50 per ton over base |
| Carbon over 0.75% | 10.00 per ton over base |
| Acid | 15.00 per ton over base |

*Chicago mill base is $46. Cleveland mill base, $45.

## Prices of Raw Materials

### Ores

*Lake Superior Ores, Delivered Lower Lake Ports*

| | *Per Gross Ton* |
|---|---|
| Old range Bessemer, 51.50% iron | $4.55 |
| Old range non-Bessemer, 51.50% iron | 4.40 |
| Mesabi Bessemer, 51.50% iron | 4.40 |
| Mesabi non-Bessemer, 51.50% iron | 4.25 |
| High phosphorus, 51.50% iron | 4.15 |

*Foreign Ore, c.i.f. Philadelphia or Baltimore*

| | *Per Unit* |
|---|---|
| Iron ore, low phos., copper free, 55 to 58% iron in dry Spanish or Algeria | 9.50c. to 10c. |
| Iron ore, Swedish, average 66% iron | 9.50c. |
| Manganese ore, washed, 52% manganese, from the Caucasus | 40c. |
| Manganese ore, high grade, nominal | 35c. to 44c. |
| Tungsten ore, high grade, per unit, in 60% concentrates | $11.75 to $12.50 |
| | *Per Ton* |
| Chrome ore, Indian basic, 48% $Cr_2O_3$, crude, c.i.f. Atlantic seaboard | $22.50 |
| | *Per Lb.* |
| Molybdenum ore, 85% concentrates of $MoS_2$, delivered | 50c. to 55c. |

### Coke

| | *Per Net Ton* |
|---|---|
| Furnace, f.o.b. Connellsville prompt | $3.50 to $3.75 |
| Foundry, f.o.b. Connellsville prompt | 4.50 to 5.50 |
| Foundry, by-product, Ch'go ovens | 9.75 |
| Foundry, by-product, New England, del'd | 13.50 |
| Foundry, by-product, Newark or Jersey City ,delivered | 9.59 to 10.77 |
| Foundry, Birmingham | 5.00 to 5.50 |
| Foundry, by-product, St. Louis or Granite City | 10.00 |

### Coal

| | *Per Net Ton* |
|---|---|
| Mine run steam coal, f.o.b. W. Pa. mines | $1.75 to $2.00 |
| Mine run coking coal, f.o.b. W. Pa. mines | 1.85 to 2.00 |
| Mine run gas coal, f.o.b. Pa. mines | 2.10 to 2.25 |
| Steam slack, f.o.b. W. Pa. mines | 1.40 to 1.55 |
| Gas slack, f.o.b. W. Pa. mines | 1.60 to 1.75 |

### Ferromanganese

| | *Per Gross Ton* |
|---|---|
| Domestic, 80%, furnace or seab'd | $100.00 |
| Foreign, 80%, Atlantic or Gulf port, duty paid | 100.00 |

### Spiegeleisen

| | *Per Gross Ton Furnace* |
|---|---|
| Domestic, 19 to 21% | $37.00 |
| Domestic, 16 to 19% | 36.00 |

### Electric Ferrosilicon

| | *Per Gross Ton Delivered* |
|---|---|
| 50% | $85.00 |
| 75% | 145.00 |

| *Per Gross Ton Furnace* | | *Per Gross Ton Furnace* | |
|---|---|---|---|
| 10% | $35.00 | 12% | $39.00 |
| 11% | 37.00 | 14 to 16% | $45 to 46.00 |

### Bessemer Ferrosilicon

**F.o.b. Jackson County, Ohio, Furnace**

| *Per Gross Ton* | | *Per Gross Ton* | |
|---|---|---|---|
| 10% | $34.00 | 12% | $38.00 |
| 11% | 36.00 | | |

### Silvery Iron

**F.o.b. Jackson County, Ohio, Furnace**

| *Per Gross Ton* | | *Per Gross Ton* | |
|---|---|---|---|
| 6% | $26.50 | 10% | $32.00 |
| 7% | 27.50 | 11% | 34.00 |
| 8% | 28.50 | 12% | 36.00 |
| 9% | 30.00 | | |

### Other Ferroalloys

| | |
|---|---|
| Ferrotungsten, per lb. contained metal, del'd | $1.05 to $1.10 |
| Ferrochromium, 4 to 6% carbon and up, 65 to 70% Cr., per lb. contained Cr. delivered, in carloads | 11.50c. |
| Ferrovanadium, per lb. contained vanadium, f.o.b. furnace | $3.25 to $4.00 |
| Ferrocarbontitanium, 15 to 18%, per net ton, f.o.b. furnace, in carloads | $200.00 |
| Ferrophosphorus, electric or blast furnace material, in carloads, 18%, Rockdale, Tenn., base, per net ton | $91.00 |
| Ferrophosphorus, electric, 24%, f.o.b. Anniston, Ala., per net ton | $122.50 |

### Fluxes and Refractories

#### Fluorspar

| | *Per Net Ton* |
|---|---|
| Domestic, 85% and over calcium fluoride, not over 5% silica, gravel, f.o.b. Illinois and Kentucky mines | $18.00 |
| No. 2 lump, Illinois and Kentucky mines | $20.00 |
| Foreign, 85% calcium fluoride, not over 5% silica, c.i.f. Atlantic port, duty paid, | $17.00 to $17.50 |
| Domestic, No. 1 ground bulk, 95 to 98% calcium fluoride, not over 2½% silica, f.o.b. Illinois and Kentucky mines | $32.50 |

#### Fire Clay

| | *Per 1000 f.o.b. Works* | |
|---|---|---|
| | High Duty | Moderate Duty |
| Pennsylvania | $40.00 to $43.00 | $38.00 to $40.00 |
| Maryland | 43.00 to 46.00 | 38.00 to 40.00 |
| New Jersey | 55.00 to 75.00 | |
| Ohio | 40.00 to 43.00 | 38.00 to 40.00 |
| Kentucky | 40.00 to 43.00 | 38.00 to 40.00 |
| Illinois | 40.00 to 43.00 | 35.00 to 38.00 |
| Missouri | 40.00 to 43.00 | 35.00 to 38.00 |
| Ground fire clay, per ton | 6.50 to | 7.50 |

#### Silica Brick

| | *Per 1000 f.o.b. Works* |
|---|---|
| Pennsylvania | $40.00 to $43.00 |
| Chicago | 52.00 |
| Birmingham | 50.00 |
| Silica clay, per ton | $8.00 to 9.00 |

#### Magnesite Brick

| | *Per Net Ton* |
|---|---|
| Standard sizes, f.o.b. Baltimore and Chester, Pa. | $65.00 |
| Grain magnesite, f.o.b. Baltimore and Chester, Pa. | 40.00 |

#### Chrome Brick

| | *Per Net Ton* |
|---|---|
| Standard size | $45.00 |

## Mill Prices of Bolts, Nuts, Rivets and Set Screws

### Bolts and Nuts

*(Less-than-Carload Lots)*

F.o.b. Pittsburgh, Cleveland, Birmingham and Chicago

| | *Per Cent Off List* |
|---|---|
| Machine bolts, small, rolled threads | 60 and 10 |
| Machine bolts, all sizes, cut threads | 50, 10 and 10 |
| Carriage bolts, smaller and shorter, rolled threads | 50, 10 and 10 |
| Carriage bolts, cut threads, all sizes | 50 and 10 |
| Eagle carriage bolts | 65 and 10 |
| Lag bolts | 60, 10 and 10 |
| Plow bolts, Nos. 3 and 7 heads | 50 and 10 |
| (Extra of 20% for other style heads) | |
| Machine bolts, c.p.c. and t. nuts, ⅝ x 4 in., | 45, 10 and 5 |
| Larger and longer sizes | 45, 10 and 5 |
| Bolt ends with hot-pressed nuts | 50, 10 and 10 |
| Bolt ends with cold-pressed nuts | 45, 10 and 5 |
| Hot-pressed nuts, blank and tapped, square, | 4.00c. per lb. off list |
| Hot-pressed nuts, blank or tapped, hexagons, | 4.40c. per lb. off list |
| C.p.c. and t. square or hex. nuts, blank or tapped | 4.10c. per lb. off list |
| Washers* | 6.75c. to 6.50c. per lb. off list |

*F.o.b. Chicago and Pittsburgh.

The discount on machine, carriage and lag bolts is 5 per cent more than above for car lots. On hot-pressed and cold-punched nuts the discount is 25c. more per 100 lb. than quoted above for car lots.

### Bolts and Nuts

(Quoted with actual freight allowed up to but not exceeding 50c. per 100 lb.)

| | *Per Cent Off List* |
|---|---|
| Semi-finished hexagon nuts: | |
| ⅜ in. and smaller, U. S. S. | 80, 10, 10 and 5 |
| ⅞ in. and larger, U. S. S. | 75, 10, 10 and 5 |
| Small sizes, S. A. E. | 80, 10, 10, 10 and 5 |
| S. A. E., ⅝ in. and larger | 75, 10, 10, 10 and 5 |
| Stove bolts in packages | 80, 10 and 5 |
| Stove bolts in bulk | 80, 10, 5 and 2½ |
| Tire bolts | 60 and 5 |

### Semi-Finished Castellated and Slotted Nuts

(Actual freight allowed up to but not exceeding 50c. per 100 lb.)

(To jobbers and consumers in large quantities)

| | Per 100 Net S.A.E. | Per 100 Net U.S.S. | | Per 100 Net S.A.E. | Per 100 Net U.S.S. |
|---|---|---|---|---|---|
| ¼-in. | $0.44 | $0.44 | ¾ in. | $2.35 | $2.40 |
| 5/16-in. | 0.515 | 0.515 | ⅞-in. | 3.60 | 3.60 |
| ⅜-in. | 0.62 | 0.66 | 1-in. | 5.65 | 5.80 |
| 7/16-in. | 0.79 | 0.90 | 1⅛-in. | 8.90 | 8.90 |
| ½-in. | 1.01 | 1.05 | 1¼-in. | 12.60 | 13.10 |
| 9/16-in. | 1.38 | 1.42 | 1⅜-in. | 18.35 | 18.35 |
| ⅝-in. | 1.70 | 1.73 | 1½-in. | 21.00 | 21.00 |

Larger sizes.—Prices on application.

### Large Rivets

| | *Base per 100 Lb.* |
|---|---|
| F.o.b. Pittsburgh | $2.35 to $2.50 |
| F.o.b. Cleveland | 2.70 |
| F.o.b. Chicago | 2.60 to 2.70 |

### Small Rivets

| | *Per Cent Off List* |
|---|---|
| F.o.b. Pittsburgh | 70, 10 and 5 to 70 and 10 |
| F.o.b. Cleveland | 70, 10 and 5 to 70 and 10 |
| F.o.b. Chicago | 70, 10 and 5 to 70 and 10 |

### Cap and Set Screws

(Freight allowed up to but not exceeding 50c. per 100 lb.)

| | *Per Cent Off List* |
|---|---|
| Milled cap screws | 80 and 10 |
| Milled standard set screws, case hardened, | 80 and 5 |
| Milled headless set screws, cut thread | 80 |
| Upset hex. head cap screws, U.S.S. thread, | 80, 10 and 10 |
| Upset hex. cap screws, S.A.E. thread, | 80, 10 and 10 |
| Upset set screws | 80, 10 and 5 |
| Milled studs | 70 and 5 |

# Chicago

## Heavy Railroad Car Purchases Will Add 70,000 Tons to Mill Books

CHICAGO, Jan. 11.—This week is notable from the standpoint of railroad equipment contracts. The Santa Fe has placed 2800 freight cars, the Rock Island, 2500, and the North Western Refrigerator Line Co., 1020 refrigerator cars, a total of 6320 cars which will add close to 70,000 tons of steel to Chicago mill books. The Rock Island has also placed 73 passenger cars, and three other railroads ordered 53, bringing the total taken by Chicago district builders during the week to 126. The Santa Fe's purchases included an order for 25 locomotives, which went to the Baldwin Locomotive Works. The Missouri Pacific has issued a fresh inquiry for 36 engines of various types.

Current shipments of hot-rolled strip are equal to about 80 per cent of the average for 1926, and both new orders and specifications for soft steel bars exceed shipments. On the other hand, orders for shapes and plates, with the exception of those emanating from the railroads, show little or no improvement over the volume at the turn of the year. Rail mills in this territory have increased operations to 80 per cent of capacity, and heavier rolling schedules for track accessories are now being arranged.

**Pig Iron.**—Southern foundry iron is off $2 a ton and is now being quoted at $18, base Birmingham. The rail-and-water freight rate in Chicago is $4.18, and the all-rail rate is $6.01, bringing the delivered prices to $22.18 by rail and water and to $24.01 if shipped by rail. The Northern iron market is steady, although shipments are smaller than in the first week in the new year when there was rather general activity on the part of users, who found it necessary to build up inventories, which were unusually low. Sales early last week were in fair volume, but during the last few days buyers have shown interest only in carlot purchases. An Indiana melter has taken 1000 tons of malleable, and a carwheel company in southern Illinois has purchased 1000 tons.

Quotations on Northern foundry, high phosphorus and malleable iron are f.o.b. local furnace, and do not include an average switching charge of 61c. per ton. Other prices are for iron delivered at consumers' yards:

| | |
|---|---|
| Northern No. 2 foundry, sil. 1.75 to 2.25 | $21.00 |
| Northern No. 1 foundry, sil. 2.25 to 2.75 | 21.50 |
| Malleable, not over 2.25 sil. | 21.00 |
| High phosphorus | 21.00 |
| Lake Superior charcoal, averaging sil. 1.50, delivered at Chicago | 27.04 |
| Southern No. 2 (all rail) | 24.01 |
| Southern No. 2 (barge and rail) | 22.18 |
| Low phos., sil. 1 to 2 per cent, copper free | $31.50 to 32.50 |
| Silvery, sil. 8 per cent | 33.29 |
| Bessemer ferrosilicon, 14 to 15 per cent | 46.79 |

**Coke.**—Forward contracting is well advanced, and shipments show some improvement over those during the inventory period.

**Ferroalloys.**—This market is quiet, and prices are steady for orders of carlot proportions. A user near Chicago has taken 400 tons of 50 per cent ferrosilicon at $85, delivered.

We quote 80 per cent ferromanganese, $107.56, delivered Chicago; 50 per cent ferrosilicon, $85, delivered; spiegeleisen, 18 to 22 per cent, $44.56, delivered Chicago.

**Plates.**—The Rock Island has divided orders for 2500 freight and 73 passenger cars among six builders in the Middle West. This purchase, calling for close to 30,000 tons of plates, shapes and bars, follows closely that of the Missouri Pacific, which will take a like tonnage. The Burlington is reported to be ready to enter the market for freight equipment, and the Santa Fe is expected to close this week for 2800 cars. Fresh inquiry includes 1000 automobile box cars wanted by the Wabash. New orders for passenger equipment, in addition to the purchase by the Rock Island, include 19 cars for the Burlington, 31 for the New York Central and three for the Norfolk & Western, a total of 53, all of which were taken by the Pullman Car & Mfg. Corporation. Car builders have not rounded out their schedules on new orders, and it may be several weeks before mills feel the effects of recent railroad business. Two oil producers in the Seminole field, Oklahoma, have placed a total of 2800 tons of tankage material with Western mills, and outstanding inquiry for similar projects now stands close to 10,000 tons. Specifications from tank builders are light, structural fabricators being the largest users of plates at the moment. Although deliveries on plates have extended somewhat within the past week, they can still be described as prompt. Large users are resisting the Chicago quotation of 2.10c., but mills have little or no difficulty in obtaining that price for the general run of current orders.

The mill quotation on plates is 2.10c. per lb., base, Chicago.

**Structural Material.**—The preparation of building plans in this district continues at a substantial rate, and fabricators, whose shop orders are running low, are looking forward to more active business in the late winter or early spring. The Medinah Athletic Club, Chicago, plans for which are now well advanced, will require close to 6000 tons. A cable building for the Western Electric Co., Chicago, calls for 1500 tons, and a tin house for the Continental Can Co., Clearing, Ill., will take 500 tons. A formal contract for the Chicago Central Police and Courts Building, which calls for 4100 tons, has been signed by the American Bridge Co. Although outstanding inquiry is large for this time of the year, the awarding of contracts is backward and fabricated steel prices have taken a dip. Shops in the immediate Chicago district have order books for about four weeks, but to the east and south operating schedules are greatly reduced and several plants have suspended operations. Plain material is firm in this market at 2.10c., Chicago, but prices are weak throughout central and southern Indiana, a 1000-ton order having been placed recently at Indianapolis at the equivalent of 2c., base Chicago.

The mill quotation on plain material is 2.10c. per lb. base, Chicago.

**Bars.**—The demand for soft steel bars is gradually expanding in practically all directions, although it is noticeable that makers of automobile accessories are responsible for the bulk of the increase in specifications and new orders. Fresh inquiry received this week from makers of bolts and nuts is a reflection of railroad equipment business placed recently. Both new business and specifications are heavier than shipments. The Chicago price of 2.10c. for mild steel bars is steady for small and average-sized orders. Mills are making a strenuous effort to hold to that base for large orders, but users of round tonnages are offering strong resistance to what they term is an advance in price, inasmuch as the last contracts signed by them were at the old base of 2c. At Indianapolis a 1500-ton lot of mild steel bars has been placed at 2c., Chicago. The order is said to have been taken in competition with combination water-and-rail rates from the East. Buying of iron bars is in small volume. Orders for rail steel bars are few in number and of light tonnage. Production in this territory is not above 60 per cent, with one mill down until Jan. 17, while it is undergoing extensive repairs. Users of fence posts are placing larger orders, but heavy shipments for spring delivery will not be made before the middle of the month. The general manufacturing trade is being quoted 1.90c., Chicago, for desirable tonnages, while users of reinforcing bars made of rail steel are paying 2c., Chicago

The prices per lb. are: Mild steel bars, 2.10c.; base, Chicago; common bar iron, 2c. base, Chicago; rail steel bars, 1.90c. to 2c., base, Chicago.

**Rails and Track Supplies.**—Rail delivery schedules for January are approximately 10 per cent heavier than for December, and Chicago mills have advanced their rate of operation to about 80 per cent of capacity. Last fall the railroads seemed to be better prepared to anticipate their rail requirements and took heavier ton-

nages than had been their custom during the late months of previous years. The result is that mill schedules are well arranged, and there is no evidence now pointing to extreme pressure for deliveries when spring track work gets under way. A railroad with a terminal at Chicago has placed 13,000 tons of standard-section rails, of which 11,000 tons went to Chicago mills. Although about 15,000 tons of track accessories are pending, actual orders are in small volume. There is more pressure for the deliveries of track supplies than of rails, and makers of spikes, bolts, angle bars and tie plates are stepping up production. No new orders are reported in light rails, and the total inquiry now outstanding does not exceed 500 tons.

Standard Bessemer and open-hearth rails, $43; light rails, rolled from billets, $36 to $38 per gross ton, f.o.b. maker's mill.
Standard railroad spikes, 2.90c. per lb. mill; track bolts with square nuts, 3.90c. mill; steel tie plates, 2.35c. mill; angle bars, 2.75c. mill.

**Hot-Rolled Strip.**—Demand is increasing as the automobile trade swings into larger production. Shipments to users are now at a rate equal to 75 or 80 per cent of Western makers' capacity. Production for the second week in January is holding close to the average maintained throughout 1926. Prices lack strength.

**Bolts, Nuts and Rivets.**—Contracts signed by users for the first quarter are about equal in volume to those taken for the final three months of last year. Specifications show little improvement except from automobile makers. The trade believes, however, that railroad car builders will place large orders at an early date.

**Cast Iron Pipe.**—Recent reductions in prices appear to have brought out some business for winter manufacture. Fresh inquiry is heavier than it has been for some time. Recent orders have been taken at close to $37, base Birmingham, for 6-in. and larger diameters.

The National Cast Iron Pipe Co. has taken 600 tons of 6 and 10-in. Class B pipe for North Riverside, Ill.
It is reported that the United States Cast Iron Pipe & Foundry Co. will supply 700-tons of 12-in. centrifugal pipe for Macomb, Ill.
The American Cast Iron Pipe Co. will furnish 90 tons of 10-in. and 40 tons of 8-in. Class B pipe for Bridgeport, Ohio.
Milwaukee is in the market for 1700 tons of 6-in., 200 tons of 8-in., 1600 tons of 12-in. and 1700 tons of 16-in. Class C pipe and 211 tons of fittings.
Toledo Ohio, will take bids Jan. 18 on 840 tons of 24-in. pipe, 1000 tons of 6 to 12-in. pipe, 21 tons of 20-in. fittings and 42 tons of 4 to 12-in. fittings, all Class B.
Chicago will open bids Jan. 20 on 2900 tons of 6, 8 and 12-in. Class B pipe.
Columbus, Ohio, is reported to have placed with an unnamed bidder 1500 tons of 4 to 24-in. pipe and 50 tons of fittings.
St. Paul, Minn., is in the market for 1000 tons of 6, 8, 12 and 16-in. Class B pipe.

We quote per net ton, delivered, Chicago, as follows: Water pipe, 4-in., $49.20 to $50.20; 6-in. and over, $45.20 to $46.20; Class A and gas pipe, $4 extra.

**Reinforcing Bars.**—Unusually open weather for this time of the year has favored building programs, and shipments of reinforcing bars are keeping up to the rate of December. Fresh inquiry is small, but outstanding business is large and dealers believe that contracts signed this month will compare favorably in total volume with January a year ago. Recent orders, however, have been for small individual tonnages, whereas a year ago many bar benders were still working on large contracts that called for much straight shop work. Billet steel reinforcing bars out of Chicago warehouse are weak at 2.25c. to 2.60c. New inquiries and recent awards are shown on page 186.

**Wire Products.**—Orders from the jobbing trade are growing in size and number as a general move gets under way to increase stocks that were allowed to run low during the latter part of the old year. The railroads continue to buy rather liberally and are now making inquiry for fence that will be delivered in the spring. The volume of specifications from the manufacturing trade shows considerable improvement when compared with the final three weeks of 1926. Mill stocks are of fair size, but producers do not look upon them as burdensome, in view of the fact that the expected spring trade is near at hand. Mill operations are at 50 per cent of capacity. Mill prices are steady and are shown on page 173.

**Sheets.**—A large order for galvanized sheets for delivery through the third quarter has been placed at Chicago at 3.95c., base district mill. On the whole, forward contracting lags, although the total of all small orders has advanced mill deliveries to an average of about four weeks. Blue annealed sheets are in the greatest demand, with the galvanized product running a close second.

Chicago delivered prices from mill at 3.25c. for No. 24 black; 2.55c. for No. 10 blue annealed; 4c. to 4.10c. for No. 24 galvanized. Delivered prices at other Western points are equal to the freight from Gary plus the mill prices, which are 5c. per 100 lb. lower than the Chicago delivered prices.

**Old Material.**—A Chicago mill has taken 5000 tons of heavy melting steel at $13.75 per gross ton, delivered, this being an advance of 25c. over the market of last week. Inquiry for scrap is more active, but many users are still willing to operate with low stocks and to await solicitation by dealers who have tonnage coming out on track. Mills are offering $10.25 per gross ton, delivered, for cast iron borings, but no sales are reported. Small sales of rolled steel wheels, No. 1 wrought, railroad cast and leaf springs have been made at 25c. to 50c. above recent quotations. Lists advertised by the railroads include 3500 tons offered by the Santa Fe; 3300 tons by the Wabash; 2800 tons by the Great Northern; 1300 tons by the Northern Pacific and 1200 tons by the Soo Line.

We quote delivered in consumers' yards, Chicago and vicinity, all freight and transfer charges paid for all items, except relaying rails, including angle bars to match, which are quoted f.o.b. dealers' yards:

| | |
|---|---|
| *Per Gross Ton* | |
| Heavy melting steel | $13.25 to $13.75 |
| Frogs, switches and guards, cut apart, and miscellaneous rails | 14.50 to 15.00 |
| Shoveling steel | 13.00 to 13.50 |
| Hydraulic compressed sheets | 11.50 to 12.00 |
| Drop forge flashings | 9.50 to 10.00 |
| Forged cast and rolled steel carwheels | 17.00 to 17.50 |
| Railroad tires, charging box size | 17.50 to 18.00 |
| Railroad leaf springs, cut apart | 17.00 to 17.50 |
| Steel couplers and knuckles | 16.00 to 16.50 |
| Coil springs | 17.25 to 17.75 |
| Low phosphorus punchings | 15.50 to 16.00 |
| Axle turnings, foundry grade | 13.00 to 13.50 |
| Axle turnings, blast fur. grade | 11.00 to 11.50 |
| Relaying rails, 56 to 60 lb | 25.50 to 26.50 |
| Relaying rails, 65 lb. and heavier | 26.00 to 31.00 |
| Rerolling rails | 16.25 to 16.75 |
| Steel rails, less than 3 ft | 16.50 to 17.00 |
| Iron rails | 13.50 to 14.00 |
| Cast iron borings | 9.75 to 10.25 |
| Short shoveling turnings | 9.75 to 10.25 |
| Machine shop turnings | 6.50 to 7.00 |
| Railroad malleable | 16.00 to 16.50 |
| Agricultural malleable | 15.00 to 15.50 |
| Angle bars, steel | 15.25 to 15.75 |
| Cast iron carwheels | 15.25 to 15.75 |
| *Per Net Ton* | |
| No. 1 machinery cast | 16.50 to 17.00 |
| No. 1 railroad cast | 16.00 to 16.50 |
| No. 1 agricultural cast | 15.50 to 16.00 |
| Stove plate | 14.00 to 14.50 |
| Grate bars | 13.50 to 14.00 |
| Brake shoes | 13.00 to 13.50 |
| Iron angle and splice bars | 14.00 to 14.50 |
| Iron arch bars and transoms | 18.75 to 19.25 |
| Iron car axles | 22.00 to 23.50 |
| Steel car axles | 17.50 to 18.00 |
| No. 1 railroad wrought | 12.50 to 13.00 |
| No. 2 railroad wrought | 11.75 to 12.25 |
| No. 1 busheling | 10.50 to 11.00 |
| No. 2 busheling | 6.25 to 6.75 |
| Locomotive tires, smooth | 16.50 to 17.00 |
| Pipes and flues | 9.00 to 9.50 |

## Warehouse Prices, f.o.b. Chicago

| | Base per Lb. |
|---|---|
| Plates and structural shapes | 3.10c. |
| Mild steel bars | 3.00c. |
| Reinforcing bars, billet steel | 2.25c. to 2.60c. |
| Cold-finished steel bars and shafting— | |
| Rounds and hexagons | 3.60c. |
| Flats and squares | 4.10c. |
| Hoops | 4.15c. |
| Bands | 3.65c. |
| No. 24 galvanized sheets | 4.80c. |
| No. 10 blue annealed sheets | 3.50c. |
| No. 24 galvanized sheets | 4.80c. |
| Standard railroad spikes | 3.55c. |
| Track bolts | 4.55c. |
| Structural rivets | 3.50c. |
| Boiler rivets | 3.70c. |
| | Per Cent Off List |
| Machine bolts | 50 and 5 |
| Carriage bolts | 47½ |
| Coach or lag screws | 55 and 5 |
| Hot-pressed nuts, squares, tapped or blank, | 3.25c. off per lb. |
| Hot-pressed nuts, hexagons, tapped or blank, | 3.75c. off per lb. |
| No. 8 black annealed wire, per 100 lb. | $3.30 |
| Common wire nails, base per keg | 3.05 |
| Cement coated nails, base per keg | 3.05 |

# New York

## Pig Iron Demand Shows Gain—Steel Price Weakness Broadens

NEW YORK, Jan. 11.—In the pig iron market the amount of business that developed in the first week of the new year was of encouraging proportions. Sales by local brokers totaled approximately 8000 tons, and pending inquiries calling for more than 1000 tons each total close to 10,000 tons. The fact that some of the larger buyers that were thought to have covered their requirements are coming into the market for additional tonnage for prompt and first quarter shipment is regarded as an indication of heavier melt. Among the larger inquiries is one from a railroad equipment manufacturer for 3000 tons. A New Jersey melter is in the market for 500 tons of foundry and 1500 tons of malleable, and another consumer in that State wants 1200 tons of foundry. The Worthington Pump & Machinery Corporation is expected to close today against its inquiry for 1200 tons for Harrison, N. J. The New York Central has placed 500 tons for its Frankfort, N. Y., and Elkhart, Ind., shops, and the Delaware & Hudson has bought 100 tons of foundry for Watervliet, N. Y. For its Richmond, Va., plant the American Locomotive Co. has bought 300 tons of Virginia iron. The price situation has shown little change since a week ago, although competition is severe on attractive tonnages. On the general run of business taken by Buffalo furnaces the ruling price is $19, base furnace, for foundry iron, but concessions of 25c., 50c. and $1 a ton have been made in some instances. Eastern Pennsylvania foundry iron continues to range from $21.50 to $22, base furnace.

We quote per gross ton delivered in the New York district as follows, having added to furnace prices $1.39 to $2.52 freight from eastern Pennsylvania, $4.91 from Buffalo and $5.54 from Virginia:

| | |
|---|---|
| East. Pa. No. 2 fdy., sil. 1.75 to 2.25 | $22.89 to $24.02 |
| East. Pa. No. 2X fdy., sil. 2.25 to 2.75 | 23.39 to 24.52 |
| East. Pa. No. 1X fdy., sil. 2.75 to 3.25 | 23.89 to 25.02 |
| Buffalo fdy., sil. 1.75 to 2.25 (all rail) | 22.91 to 23.91 |
| No. 2 Virginia fdy., sil. 1.75 to 2.25 | 27.54 to 28.04 |

**Ferroalloys.**—Sales and inquiries are light and interest in the market is at a low ebb. Very little new business is reported in spiegeleisen although some contracts and a few sales of small lots have been made this week at unchanged prices.

**Reinforcing Bars.**—Few sizable jobs have been let since the first of the year, and small orders have not been numerous. Inquiries continue to accumulate, and there is a considerable volume of work under estimate. Approaches to the New York-New Jersey vehicular tunnel in Jersey City will require 500 tons of reinforcing bars. Some concessions from the quoted prices are reported, but there has not been enough work to provide a conclusive test of the market.

Mill prices on billet steel reinforcing bars are 2.10c. per lb., base, Pittsburgh, on lots of less than 100 tons and 2c., base, on large lots. Reinforcing bars out of New York warehouse are quoted at 3.15c. per lb., delivered at job, and out of Youngstown warehouse, at 2.50c., Youngstown, or 2.87½c., delivered New York.

**Warehouse Business.**—Buying from stock is still limited to small lots of black and galvanized sheets, steel plates and similar products. Demand for structural material and reinforcing bars has practically ceased. A reduction of price on cold-rolled strip steel has been made to conform to the lower mill quotation. The base price has been dropped from 6.25c. to 5.75c. per lb. Cold-rolled flat wire has been reduced from 6.75c. to 6c. per lb., base.

**Cast Iron Pipe.**—The low prices that have been current during the past month or more have apparently brought in a sizable tonnage of business to most makers. It is estimated that in the last half of December and so far this month close to 100,000 tons of gas and water pipe has been closed in the New York and New England districts. The Consolidated Gas Co., New York, is reported to have closed on about 3000 tons of gas pipe. The Elizabeth Gas Co., Elizabeth, N.-J., is reported to have placed about 3000 tons of pipe with the Warren Foundry & Pipe Co. The city of Yonkers, N. Y., has awarded about 200 tons of water pipe to the Donaldson Iron Co. The United Gas Improvement Co., Philadelphia, is reported to have closed on a small part of its total inquiry for pipe. While prices of water and gas pipe show no tendency to advance, the low levels so common a few weeks ago are becoming rare, with most producers fairly well booked with tonnage.

We quote pressure pipe per net ton, f.o.b. New York in carload lots, as follows: 6-in. and larger, $48.60 to $50.60; 4-in. and 5-in., $53.60 to $55.60; 3-in., $63.60 to $65.60; with $5 additional for Class A and gas pipe.

**Finished Steel.**—The new year has brought no marked change as yet in the volume of steel demand as compared with December, but it has brought keener competition for orders, particularly in sheets. There is perhaps a larger number of small orders, a situation which is the natural aftermath of the careful buying

### Warehouse Prices, f.o.b. New York

| | Base per Lb. |
|---|---|
| Plates and structural shapes | 3.34c. |
| Soft steel bars and small shapes | 3.24c. |
| Iron bars | 3.24c. |
| Iron bars, Swedish charcoal | 7.00c. to 7.25c. |
| Cold-finished steel shafting and screw stock— | |
| Rounds and hexagons | 4.00c. |
| Flats and squares | 4.50c. |
| Cold-rolled strip, soft and quarter hard | 5.75c. |
| Hoops | 4.49c. |
| Bands | 3.99c. |
| Blue annealed sheets (No. 10 gage) | 3.89c. |
| Long terne sheets (No. 24 gage) | 5.80c. |
| Standard tool steel | 12.00c. |
| Wire, black annealed | 4.50c. |
| Wire, galvanized annealed | 5.15c. |
| Tire steel, 1½ x ½ in. and larger | 3.30c. |
| Smooth finish, 1 to 2½ x ¼ in. and larger | 3.65c. |
| Open-hearth spring steel, bases | 4.50c. to 7.00c. |
| | Per Cent Off List |
| Machine bolts, cut thread | 40 and 10 |
| Carriage bolts, cut thread | 30 and 10 |
| Coach screws | 40 and 10 |
| Boiler Tubes— | Per 100 Ft. |
| Lap welded steel, 2-in. | $17.33 |
| Seamless steel, 2-in. | 20.24 |
| Charcoal iron, 2-in. | 25.00 |
| Charcoal iron, 4-in. | 67.00 |

*Discounts on Welded Pipe*

| Standard Steel— | Black | Galv. |
|---|---|---|
| ½-in. butt | 46 | 29 |
| ¾-in. butt | 51 | 37 |
| ⅞-in. butt | 53 | 39 |
| 2½-6-in. lap | 48 | 35 |
| 7 and 8 in. lap | 44 | 17 |
| 11 and 12-in. lap | 37 | 12 |
| Wrought Iron— | | |
| ½-in. butt | 4 | +19 |
| ¾-in. butt | 11 | + 9 |
| 1-1½-in. butt | 14 | + 6 |
| 2-in. lap | 5 | +14 |
| 3-6-in. lap | 11 | + 6 |
| 7-12-in. lap | 3 | +16 |

*Tin Plate* (14 *x* 20 *in.*)

| | Prime | Seconds |
|---|---|---|
| Coke, 100 lb. base box | $6.45 | $6.20 |
| Charcoal, per box— | A | AAA |
| IC | $9.70 | $12.10 |
| IX | 12.00 | 14.25 |
| IXX | 13.90 | 16.00 |

*Terne Plate* (14 *x* 20 *in.*)

| | |
|---|---|
| IC—20-lb. coating | $10.00 to $11.00 |
| IC—30-lb. coating | 12.00 to 13.00 |
| IC—40-lb. coating | 13.75 to 14.25 |

*Sheets, Box Annealed—Black, C. R. One Pass*

| | Per Lb. |
|---|---|
| Nos. 18 to 20 | 4.15c. |
| No. 22 | 4.30c. |
| No. 24 | 4.35c. |
| No. 26 | 4.45c. |
| No. 28* | 4.60c. |
| No. 30 | 4.85c. |

*Sheets, Galvanized*

| | Per Lb. |
|---|---|
| No. 14 | 4.50c. to 4.75c. |
| No. 16 | 4.60c. to 4.85c. |
| No. 18 | 4.75c. |
| No. 20 | 4.90c. |
| No. 22 | 4.95c. |
| No. 24 | 5.10c. |
| No. 26 | 5.35c. |
| No. 28* | 5.60c. |
| No. 30 | 6.00c. |

*No. 28 and lighter, 36 in. wide, 20c. higher per 100 lb.

in December, but even so the total tonnage booked by local sales offices since the first of the year shows only a slight improvement over the December average. The competition for orders among some of the sheet mills has developed the lowest prices since 1921. Concessions have been reported for several weeks, but many mills still held to the higher levels; now, however, there is a more general tendency to meet competition. On black sheets quotations above 2.90c., Pittsburgh, for No. 24 gage are of little effect in getting business, and sales have been made in this district within the past week at 2.80c. and 2.85c., the former being exceptional. On galvanized sheets prices have ranged from 3.70c. to 3.85c., Pittsburgh, but quotations above 3.75c., Pittsburgh, are often unsuccessful in getting business. Blue annealed sheets are also weaker, with most of the sales at 2.25c. to 2.30c., Pittsburgh, and an occasional sale at 2.20c. Makers of hot rolled strip steel, who have held prices firmly for more than a year, are more aggressive sellers, but reports of price concessions are somewhat indefinite. Weakness in cold rolled strip steel continues, quotations ranging from 2.85c. to 3c., Pittsburgh or Cleveland. The local structural steel situation has been somewhat affected by the prices quoted by some Eastern mills anxious for tonnage. The larger producers have been quoting 2c., Pittsburgh, but sales have been made by one or two mills at $2 a ton lower. Quotations on plates continue at 1.90c., Pittsburgh, with orders of more than a carload the exception. Bookings of fabricated structural steel in December, as reported to the Structural Steel Board of Trade of New York, were about 34,000 tons in the metropolitan area, not including bridges, subway or elevated work. This was an increase over the 26,600 tons of November, but was a decline of several thousand tons from December, 1925.

We quote mill shipments, New York delivery, as follows: Soft steel bars, 2.34c. per lb.; plates, 2.24c.; structural shapes, 2.34c.; bar iron, 2.24c.

**Coke.**—Moderate activity continues, but the prospect of a coal strike has not yet proved much of a stimulus to buying. Prices cover a wide range, with contract foundry coke going at $5.75 to $6.25 per net ton, Connellsville, and distress tonnages available at $4.25 to $4.75, Connellsville. Standard furnace is quoted at $3.25 to $3.75 per ton, Connellsville. Spot shipment foundry coke is quoted, delivered in the New York territory, as follows: To northern New Jersey, $8.28 to $9.28 per ton; New York or Brooklyn, $9.04 to $10.04; Newark or Jersey City, N. J., $8.16 to $9.16. Effective Jan. 8, by-product foundry coke was reduced $1 per ton to $9.59 to $10.77, delivered Newark or Jersey City, N. J.

**Old Material.**—Transactions are limited to the filling of current contracts, principally for heavy melting steel. No. 1 steel ranges from $15 to $15.50 per ton, delivered eastern Pennsylvania, with shipments going to consumers at Bethlehem, Conshohocken and Coatesville, Pa., and Claymont, Del. Yard steel is quoted at about $13.50 per ton, delivered eastern Pennsylvania. There is a moderate demand for blast furnace grade, and borings and turnings range from $12.75 to $13.25 per ton, delivered. Practically all prices are unchanged, but there is a manifest downward tendency.

Buying prices per gross ton, New York, follow:

| | |
|---|---|
| Heavy melting steel (yard) | $9.25 to $9.75 |
| Heavy melting steel (railroad or equivalent) | 11.50 to 12.85 |
| Rails for rolling | 12.50 to 13.00 |
| Steel car axles | 18.50 to 19.00 |
| Iron car axles | 24.00 to 24.50 |
| No. 1 railroad wrought | 13.00 to 14.00 |
| Forge fire | 9.25 to 9.75 |
| No. 1 yard wrought, long | 12.00 to 13.00 |
| Cast borings (steel mill) | 9.25 to 9.75 |
| Cast borings (chemical) | 13.00 to 13.50 |
| Machine shop turnings | 9.25 to 9.75 |
| Mixed borings and turnings | 9.25 to 9.75 |
| Iron and steel pipe (1 in. diam., not under 2 ft. long) | 9.75 to 10.25 |
| Stove plate (steel mill) | 9.25 to 9.75 |
| Stove plate (foundry) | 11.00 to 11.50 |
| Locomotive grate bars | 10.25 to 10.75 |
| Malleable cast (railroad) | 15.50 to 16.00 |
| Cast iron carwheels | 12.00 to 12.50 |
| No. 1 heavy breakable cast | 11.75 to 13.00 |

Prices which dealers in New York and Brooklyn are quoting to local foundries per gross ton follow:

| | |
|---|---|
| No. 1 machinery cast | $16.00 to $16.50 |
| No. 1 heavy cast (columns, building materials, etc.), cupola size | 14.50 to 15.00 |
| No. 2 cast (radiators, cast boilers, etc.) | 13.50 to 14.00 |

# Cleveland

## Sheets and Hot Strip Weaken—Nickel Plate Buys 21,000 Tons of Rails

CLEVELAND, Jan. 11.—Orders for finished steel showed improvement in the past week, particularly for plates and structural material. The buying was confined largely to small lots for early requirements. While steel bars are moving better than for a few weeks, they are still dragging, and specifications are not coming out freely against contracts that have been taken below the usual Pittsburgh market price.

From a price standpoint the outstanding feature of the market during the week was the extreme weakness that has developed in blue annealed and black sheets. This has extended to automobile body sheets, on which a concession of $2 a ton has been made after the market on this grade had held firm for several months. Hot-rolled strip steel is also weak, and sharp shading has appeared on reinforcing bars.

The automotive industry is still marking time, awaiting the outcome of the automobile shows, and very little new business is coming from this source, orders being largely releases on tonnage carried over from December. A Lake boat requiring 3000 tons of steel has been placed with a Detroit shipyard. Dams on the lower part of the Ohio River will require 2200 tons of steel piling. In the structural field 5000 tons has been placed for a store in Akron, and a fair amount of work is in prospect.

Steel bars are unchanged at 1.90c. to 2c., Cleveland, for small sizes, with outside mills holding to 2c., Pittsburgh. Plates and structural material are firm at 1.90c. and 2c. respectively, Pittsburgh.

**Iron Ore.**—Shipments from docks are rather light. The balance on docks at Lake Erie ports Jan. 1 was 7,139,610 tons, as compared with 7,662,800 tons on Dec. 1. The dock balance Jan. 1, 1926, was 7,081,302 tons. Receipts at Lake Erie docks during December were 88,111 tons, and for the season until Jan. 1, 42,287,063 tons. Shipments during December were 562,404 tons, and for the season until Jan. 1, 30,600,877 tons, as compared with 27,926,832 tons during the previous year.

**Pig Iron.**—While the volume of business has improved since the first of the year, sales are not yet up to the expectation of some of the producers, who have been looking for a rather broad buying movement. Cleveland interests sold around 25,000 tons of foundry and malleable iron during the week, but little of it went into the northern Ohio territory. The lower price ruling in the Valley district and the activity of one Lake furnace outside of this immediate territory have resulted in some softening of prices in districts affected by this competition. A 50c. a ton reduction in foundry and malleable iron to $19.50, furnace, has been made in Michigan. In Cleveland one producer who has been on a $19.50, base, for Cleveland delivery, has reduced its price 50c. a ton to meet that of another local maker. One Lake furnace is seeking business outside of this immediate territory, particularly in western Ohio and eastern Indiana, and, it is believed, would repeat the $18 price at which it is credited with having taken some round-lot business when it had considerable freight disadvantage to overcome. However, the ruling local quotation for outside shipment is $18.50, furnace. Little inquiry is developing

**Warehouse Prices, f.o.b. Cleveland**

| | Base per Lb. |
|---|---|
| Plates and structural shapes | 3.00c. |
| Mild steel bars | 3.00c. |
| Cold-finished rounds and hexagons | 3.90c. |
| Cold-finished flats and squares | 4.40c. |
| Hoops and bands | 3.65c. |
| No. 24 black sheets | 3.80c. |
| No. 10 blue annealed sheets | 3.25c. |
| No. 24 galvanized sheets | 4.55c. to 4.65c. |
| No. 9 annealed wire, per 100 lb | $3.00 |
| No. 9 galvanized wire, per 100 lb | 3.45 |
| Common wire nails, base, per keg | 3.00 |

from the automotive industry, and since some of the parts makers in this territory that are large consumers have carried over considerable iron on fourth-quarter contracts, they are not expected to come into the market for some time. On the other hand, the small jobbing foundries in northern Ohio are quite busy.

Quotations below are per gross ton and except on basic and low phosphorus iron, are delivered Cleveland, including a 50c. switching charge for local iron. Ohio silvery and Southern iron prices are based on a $3.00 freight rate from Jackson and $6.00 from Birmingham:

| | |
|---|---|
| Basic, Valley furnace | $18.50 |
| N'th'n No. 2 fdy., sil. 1.75 to 2.25 | 19.00 |
| Southern fdy., sil. 1.75 to 2.25 | 24.00 |
| Malleable | 19.00 |
| Ohio silvery, 8 per cent | 31.50 |
| Standard low phos., Valley furn. | 28.00 |

**Rails.**—The Nickel Plate Railroad has placed 20,900 tons of rails for its 1927 requirements. Half of this tonnage went to the Carnegie and Illinois steel companies and the remainder was equally divided between the Bethlehem Steel Co. and the Inland Steel Co.

**Semi-Finished Steel.**—Some of the producers are in need of orders as a result of the reduced operation of sheet mills, and price concessions have appeared for prompt shipment orders. Sheet bars are understood to have been offered by an outside mill at $34.50, Cleveland, or a concession of $1.50 a ton in addition to the absorption of the freight by the producer.

**Sheets.**—Prices have declined on all grades, although the greater evidence of weakness is in blue annealed and black sheets, and the market is in a very unsettled condition. Previously weak, the further slump in prices is attributed to the very limited demand, the keen competition of some of the mills for business and, in the case of blue annealed sheets, to the new competition of strip sheets. Black sheets are being quoted at 2.80c., Pittsburgh, and in Ohio a 2.90c., mill, price has been rather common, although some small-lot business is still being taken at 3c. The State of Ohio received competitive bids for 1200 tons of black sheets for automobile license plates and placed the business at a price that figured back to below 2.75c., Pittsburgh. Quotations of 2.10c., Pittsburgh, have appeared on blue annealed sheets, and a local inquiry for 1000 tons or more is reported to have brought out a price of 2c., Pittsburgh. Some Ohio mills are going to 2.25c., mill, and a market range of 2.15c. to 2.25c., Pittsburgh, appears rather common. Galvanized sheets are weak, although still commonly quoted at 3.85c., Ohio mill, or equivalent to 3.75c., Pittsburgh. Some of the mills are trying to hold automobile body sheets to 4.25c., Pittsburgh. While some business was taken on that basis during the week, other sales were made at 4.15c. Sheet business from the automotive industry this month has been limited largely to the release of specifications for material held up in December.

**Strip Steel.**—The recent weakness in wide hot-rolled strip has become more pronounced, with quotations of 2.15c. to 2.20c., Pittsburgh, when the material carries good extras. On strip narrower than 6 in. the market has declined $2 a ton to 2.40c., Pittsburgh. Cold-rolled strip is untested, but the price of 3c., Cleveland, for round lots that has prevailed for some time is regarded so low that mills do not see much chance of a further reduction.

**Reinforcing Bars.**—Prices have softened under keen competition. On billet steel bars 1.90c., Cleveland, has become the ruling quotation, but this price has been shaded sharply, and jobbers have made quotations not much above mill prices. Rail steel bars are nominally 1.75c., mill, but this could be shaded.

**Warehouse Business.**—Jobbers' sales are holding up in good volume, and regular prices are being generally maintained.

**Alloy Steel Bars.**—The market shows improvement in that some inquiry is developing from the manufacturers of automobile parts in this territory. However, not much business has come out this month from the large Detroit automobile companies. While good lots have brought out concessions on some grades, prices generally are holding to recent quotations.

**Bolts, Nuts and Rivets.**—The leading local rivet maker has followed other manufacturers in eliminating the $4 a ton extra on boiler rivets, and contracts taken at the higher price will be revised. Demand is fair. Orders for bolts and nuts are slow, not having improved much since the inventory period.

**Old Material.**—The market shows a firm tone and has advanced about 25c. a ton on steel-making and blast furnace scrap. Dealers are paying $11.50 for borings and turnings and $14.75 for heavy melting steel to fill orders recently placed by a Cleveland mill. They are finding it difficult to buy much scrap at these prices, as producers and yards are inclined to hold their scrap for better prices. Consumers are showing no interest in making further scrap contracts, evidently waiting to see to what extent a demand develops for their products this month.

We quote per gross ton delivered consumers' yards in Cleveland:

| | |
|---|---|
| Heavy melting steel No. 1 | $14.75 to $15.00 |
| Heavy melting steel No. 2 | 14.25 to 14.50 |
| Rails for rolling | 16.25 to 16.50 |
| Rails under 3 ft | 16.50 to 17.00 |
| Low phosphorus billet, bloom and slab crops | 18.00 to 18.50 |
| Low phosphorus sheet bar crops | 16.50 to 17.00 |
| Low phosphorus plate scrap | 16.00 to 16.50 |
| Low phosphorus forging crops | 16.50 to 17.00 |
| Cast iron borings | 11.50 to 11.75 |
| Machine shop turnings | 9.00 to 9.25 |
| Mixed borings and short turnings | 11.50 to 11.75 |
| Compressed sheet steel | 13.50 to 13.75 |
| No. 1 railroad wrought | 11.50 to 12.00 |
| No. 2 railroad wrought | 14.00 to 14.50 |
| Railroad malleable | 16.50 to 17.00 |
| Light bundled sheet stampings | 12.00 to 12.50 |
| Steel axle turnings | 12.50 to 13.00 |
| No. 1 cast | 16.00 to 16.50 |
| No. 1 busheling | 12.00 to 12.50 |
| No. 2 busheling | 11.50 to 11.75 |
| Drop forge flashings, 15 in. and under | 12.00 to 12.50 |
| Railroad grate bars | 12.00 to 12.50 |
| Stove plate | 12.00 to 12.50 |
| Pipes and flues | 10.00 to 10.50 |

# Philadelphia

## Pennsylvania Railroad Out for 25,000 Tons of Steel—Markets Dragging

PHILADELPHIA, Jan. 11.—Since the first of the year all of the markets—steel, pig iron and scrap particularly—have been dragging, the volume of business being disappointingly small to sellers. In pig iron and scrap there is very little activity, while in steel only a slight gain has been made so far this month over the same number of business days in December. The most promising indications of larger orders lie principally in the railroad and building fields. The Pennsylvania Railroad has come out for its first quarter requirements, upward of 25,000 tons, of which 18,000 tons is plates and 7000 tons is bars, and there are a number of good-sized structural steel contracts which soon will be placed.

The falling off in steel business has brought keener competition for orders among sheet and hot-rolled strip

**Warehouse Prices, f.o.b. Philadelphia**

| | Base per Lb. |
|---|---|
| Tank steel plates, ¼-in. and heavier | 2.80c. to 3.00c. |
| Tank steel plates, ⅜-in. | 3.00c. to 3.20c. |
| Structural shapes | 2.75c. to 3.00c. |
| Soft steel bars, small shapes and iron bars (except bands) | 3.00c. to 3.20c. |
| Round-edge iron | 3.50c. |
| Round-edge steel, iron finished, 1½ x 1½ in. | 3.50c. |
| Round-edge steel, planished | 4.30c. |
| Reinforcing steel bars, square, twisted and deformed | 3.00c. |
| Cold-finished steel, rounds and hexagons | 4.00c. |
| Cold-finished steel, squares and flats | 4.50c. |
| Steel hoops | 4.00c. to 4.25c. |
| Steel bands, No. 12 gage to ⅛-in., inclusive | 3.75c. to 3.90c. |
| Spring steel | 5.00c. |
| No. 24 black sheets | 4.35c. |
| No. 10 blue annealed sheets | 3.50c. |
| No. 24 galvanized sheets | 5.30c. |
| Diamond pattern floor plates— | |
| ¼-in. | 5.30c. |
| ⅜-in. | 5.50c. |
| Rails | 3.20c. |
| Tool steel | 8.50c. |
| Swedish iron bars | 6.60c. |

manufacturers, with the result that prices have given way about $2 a ton or more in the past week on these products. In a particular instance a concession of several dollars a ton was given to obtain a desirable tonnage of hot-rolled strip steel.

**Pig Iron.**—In volume of business the past week has been one of the dullest in months. Aside from the purchase by the National Radiator Co. of several thousand tons for its Johnstown, Pa., and Trenton, N. J., plants there have been virtually no orders of importance. Inquiry is also very light. Prices, meanwhile, have remained unchanged from the week before, the range on foundry iron being $21.50 to $22, furnace, for the base grade. The situation facing the producers of iron is not a happy one, considering that their coke will cost more than in fourth quarter, and selling prices are not compensatingly higher. Only the fact that the furnaces made considerable sales in October and November at $22.50, base, alleviates their position between high costs and what they consider unsatisfactory selling prices.

The following quotations are, with the exception of those on low phosphorus iron, for delivery at Philadelphia and include freight rates varying from 76c. to $1.63 per gross ton:

| | |
|---|---|
| East. Pa. No. 2 plain, 1.75 to 2.25 sil. | $22.26 to $22.76 |
| East. Pa. No. 2X, 2.25 to 2.75 sil. | 22.76 to 23.76 |
| East. Pa. No. 1X | 23.26 to 24.26 |
| Basic delivered eastern Pa. | 21.50 to 22.00 |
| Gray forge | 21.50 to 22.00 |
| Malleable | 23.00 to 23.50 |
| Standard low phos. (f.o.b. New York State furnace) | 24.00 to 25.00 |
| Copper bearing low phos. (f.o.b. furnace) | 25.00 to 26.00 |
| *Virginia No. 2 plain, 1.75 to 2.25 sil. | 27.67 to 28.67 |
| *Virginia No. 2X, 2.25 to 2.75 sil. | 28.17 to 29.17 |

*The freight rate from Virginia furnaces to Philadelphia is $5.17 per gross ton.

**Ferromanganese.**—With one Eastern producer out of the market, the other is taking a moderate volume of business for first half. Most of the larger consumers have covered. Shipments are taken without hold-ups. Quotations on domestic and foreign alloy continue at $100, seaboard.

**Billets.**—Orders for semi-finished steel are small and infrequent. Prices remain at $35 for rerolling billets and at $40 for forging billets, Pittsburgh base.

**Plates.**—Bids will be opened by the Pennsylvania Railroad on Jan. 18 on 18,000 tons of plates for first quarter, this being slightly higher than the amount that was specified when bids for fourth quarter of 1926 were invited. The Sun Shipbuilding Co., Chester, Pa., has received a contract for the building of an oil tanker, and several thousand tons of plates and shapes will be furnished by the Steel Corporation. Miscellaneous orders for plates have increased slightly in total volume since the first of the year as compared with December business. Mills continue to quote 1.90c., Pittsburgh.

**Structural Shapes.**—Bids were closed on Jan. 8 on the building for the Fidelity-Philadelphia Trust Co., which will take about 15,000 tons of steel, but no announcement has been made as to the low bidder. A fair amount of structural work is in prospect, but only a small volume has been contracted for in the past week. Among projects which will soon be in the market are two railroad terminals at Atlantic City, one for the Pennsylvania and the other for the Reading. These will take several thousand tons of steel each. Competition for both fabricated and plain material continues keen. The price range on plain material is 1.90c. to 2c., Pittsburgh, on average orders, with prices sometimes below 1.90c. on desirable tonnage.

**Bars.**—The rate at which bars have been ordered this month is an improvement over December, but business is still below expectations of the mills. In view of the falling off last month it was considered probable that consumers would come into the market this month to an extent which has not yet materialized. Many consumers who received bars up to the end of last year on 1.90c. billing are hesitant about paying 2c., and this situation has resulted in frequent reports of concessions, for which verification is lacking.

**Sheets.**—Almost with one accord, sheet manufacturers within the past week have sought orders at whatever prices they could get, and concessions have come so rapidly that even some of the sellers have been uncertain from day to day as to what prices to quote. This situation followed weeks of irregularity, during which concessions were given by comparatively few mills. Now, however, reduced prices have been quoted by many mills. On blue annealed sheets the week's range has been from 2.20c. to 2.30c., Pittsburgh, with most of the sales at 2.25c. Galvanized sheets have declined to 3.75c., Pittsburgh, while black sheets, usually the object of the greatest competition, have ranged from 2.80c. to 2.90c., Pittsburgh, the higher price now being apparently the top that can be obtained on a carload or more. About 800 tons of sheets are inquired for on the Pennsylvania Railroad's first quarter list, and the trade will watch with interest the prices which go in on Jan. 18, as showing the stand that sheet manufacturers will openly take on prices.

**Hot-Rolled Strip Steel.**—A fairly large lot of hot-rolled strip bought by a Philadelphia manufacturer brought the first definite break in prices on this product in more than a year. The concession finally obtained by the purchaser amounted to several dollars a ton, but this does not seem to indicate what may be done on other inquiries. The fact is some sellers are quite at sea as to what to quote, but it is certain that prices are off $2 a ton or more. The quotations that have been in effect are 2.50c. for narrow strips and 2.30c. for wide strips, Pittsburgh base.

**Imports.**—Only 400 tons of foreign pig iron came in last week, 300 from the Netherlands and 100 from Germany. Other imports included 4960 tons of manganese ore from British West Africa; 4800 tons of chrome ore from British South Africa; 614 tons of blooms from France; 15 tons of steel tubes from Sweden; 163 tons of structural steel from Belgium; 22 tons of structural steel from the Netherlands.

**Old Material.**—A sale of heavy melting steel has been made within the past week at $16, delivered, duplicating the prices paid the week previous. A steel company has bought machine shop turnings and bundled sheets at $12.50, delivered, while stove plate and grate bars have been bought at $12.50 and at $13.50, delivered. The volume of business in all grades has been small.

We quote for delivery, consuming points in this district, as follows:

| | |
|---|---|
| No. 1 heavy melting steel | $15.50 to $16.00 |
| Scrap rails | 15.50 to 16.00 |
| Steel rails for rolling | 17.00 to 17.50 |
| No. 1 low phos., heavy, 0.04 per cent and under | 20.00 to 21.00 |
| Couplers and knuckles | 18.50 |
| Rolled steel wheels | 18.50 |
| Cast iron carwheels | 16.50 to 17.00 |
| No. 1 railroad wrought | 17.00 to 17.50 |
| No. 1 forge fire | 13.00 to 13.50 |
| Bundled sheets (for steel works) | 12.50 to 13.00 |
| Mixed borings and turnings (for blast furnaces) | 12.50 to 13.00 |
| Machine shop turnings (for steel works) | 12.50 to 13.00 |
| Machine shop turnings (for rolling mill) | 13.00 |
| Heavy axle turnings (or equivalent) | 14.00 to 14.50 |
| Cast borings (for steel works and rolling mill) | 13.00 to 13.50 |
| Cast borings (for chemical plant) | 15.00 to 16.00 |
| No. 1 cast | 17.00 to 17.50 |
| Heavy breakable cast (for steel works) | 16.00 to 16.50 |
| Railroad grate bars | 12.50 to 13.50 |
| Stove plate (for steel works) | 12.50 to 13.50 |
| Wrought iron and soft steel pipes and tubes (new specifications) | 14.00 to 14.50 |
| Shafting | 21.00 to 22.00 |
| Steel axles | 23.00 to 24.00 |

## Western Steel Co. Supersedes Utah Company

The Utah Steel Corporation, Midvale, Utah, by purchase of its entire assets and obligations, has become the Western Steel Co., an organization recently formed for that purpose. The new company will continue to operate both the steel mills and waste material division of the old Utah corporation, and James J. Burke, receiver for the latter company, will be general manager under the new regime. The operating personnel of the company will not be changed.

# San Francisco

## Gain in Cast Pipe Lettings in 1926—Decline in Structural Awards

SAN FRANCISCO, Jan. 8 (*By Air Mail*).—During the week 1300 tons of German and Belgian steel arrived at this port. Of this amount 500 tons is sheets and 800 tons is bars and small angles. Recently, several hundred tons of foreign hoops and bands has come in at this port. This steel is quoted at 3.15c., delivered, and no extras are charged. The usual domestic quotation is 2.50c., base, Pittsburgh, to which freight rates and extras have to be added.

In the local iron and steel market, the first week of the year has been noteworthy for heavier buying in structural material, reinforcing bars and cast iron pipe. The situation in regard to prices is unchanged. Mill quotations on all of the heavier forms of steel are firm.

On the Pacific Coast in 1926, lettings of fabricated steel calling for 100 tons or more each, as reported by the San Francisco office of THE IRON AGE, totaled 198,966 tons, against 271,361 tons in 1925. The larger total two years ago was due to an award of 75,000 tons of plates for the Mokelumne River pipe line. In reinforcing bars, awards for 1926 totaled 42,327 tons, against 52,310 tons in 1925. The local carpenters' strike, which started April 1, 1926, and which is still unsettled, may be regarded as partly responsible for the smaller tonnage of bars placed in 1926. In cast iron pipe, public lettings in 1926 amounted to 76,466 tons, a gain of 4992 tons over 1925.

**Pig Iron.**—A local importer expects to receive shipments of foundry iron from Germany and India the latter part of this month. Most of this iron has been sold to users in the San Francisco Bay district. Quotations are unchanged.

| | Per Gross Ton |
|---|---|
| *Utah basic | $25.00 to $26.00 |
| *Utah foundry, sil. 2.75 to 3.25 | 25.00 to 26.00 |
| **Indian foundry, sil. 2.75 to 3.25 | 25.00 |
| **German foundry, sil. 2.75 to 3.25 | 24.25 |

*Delivered San Francisco.
**Duty paid, f.o.b. cars San Francisco.

**Shapes.**—Lettings of fabricated structural steel for the week total 5405 tons. Fresh inquiry is unimportant. The largest individual job, 3500 tons, for a bank building in Los Angeles, was taken by the Llewellyn Iron Works. Eastern mills continue to quote plain material at 2.35c., c.i.f. Coast ports.

**Plates.**—The week's lettings total 720 tons. Fresh inquiry is confined to relatively small tonnages. The Associated Oil Co., San Francisco, placed 620 tons for two 80,000-bbl. tanks with the Western Pipe & Steel Co. While Eastern mills continue to quote plates at 2.30c., c.i.f. Coast ports, there are a number of buyers who believe that 2.25c. could be obtained on a desirable tonnage.

**Bars.**—Reinforcing bar jobbers have booked 1545 tons during the week and have announced their first quarter quotations, which range from 2.85c. per lb., base, on lots of 200 tons, to 3.10c., base, on smaller lots. At Ellensburg, Wash., the Ross Construction Co., Los Angeles, is low bidder on the general contract for construction work on the Kittatus Canal, for which 950 tons of concrete bars will be required.

**Cast Iron Pipe.**—The United States Cast Iron Pipe & Foundry Co. is low bidder on 3650 tons required by Portland, Ore., on 217 tons for Santa Barbara, Cal., and on 472 tons for Palo Alto, Cal. San Diego, Cal., has placed 101 tons with an unnamed company, and in San Rafael, Cal., the Marin Municipal Water District has awarded 757 tons to unnamed bidders. At Dayton, Wash., 653 tons has been placed at a private letting. B. Nicoll & Co., took 100 tons at Snohomish, Wash. The Pico Water District, Pico, Cal., will take bids Jan. 10 on 310 tons of 4, 6, 8, and 10-in. Class B pipe. Astoria, Cal., will call bids soon on 195 tons of 4, 6, 8 and 12-in. Class C pipe, and Palo Alto, Cal., within a few weeks, will call for tenders on 146 tons of 4 and 6-in. Class B pipe. Protests will be heard Jan. 10 at Fairfield, Cal., in regard to street improvement work, which will require 341 tons of 4, 6 and 8-in. Class B pipe. It was recently reported that Glendale, Cal., awarded 1079 tons to two domestic producers. This report has been corrected. The entire tonnage was placed with the American Cast Iron Pipe Co. Quotations on cast iron pipe are unchanged at $49 to $50 per net ton, base, f.o.b. dock San Francisco.

**Warehouse Business.**—Little new business has developed so far this year. Jobbers' tabulations of sales for last year have not all been completed, but from indications it is believed that the sales volume in this territory during 1926 exceeded that of the preceding year. Quotations are unchanged.

**Cold-Rolled Shafting.**—A number of small sales have been reported. Most of the Eastern producers are quoting 2.40c., base Pittsburgh.

**Warehouse Prices, f.o.b. San Francisco**

| | Base per Lb. |
|---|---|
| Plates and structural shapes | 3.30c. |
| Mild steel bars and small angles | 3.30c. |
| Small channels and tees, ¾-in. to 2¾-in. | 3.90c. |
| Spring steel, ¼-in. and thicker | 5.00c. |
| No. 24 black sheets | 4.90c. |
| No. 28 black sheets | 5.15c. |
| No. 10 blue annealed sheets | 4.00c. |
| No. 24 galvanized sheets | 5.65c. |
| No. 28 galvanized sheets | 6.15c. |
| Common wire nails, base per keg | $3.75 |
| Cement coated nails, 100-lb. keg | 3.75 |
| Cement coated nails, count keg | 3.00 |

# Birmingham

## Pig Iron Prices Reduced $2 Per Ton—Steel Output Again Heavy

BIRMINGHAM, Jan. 11.—Pig iron prices have declined $2 a ton to $18, Birmingham, for No. 2 foundry. Although demand has improved as a result of the reduction, buying is still confined to small lots and is not in sufficient volume to warrant a resumption of production at the pace that obtained in November and in the early part of December. However, blast furnaces that were banked or blown out are ready to go in on short notice. One furnace interest with 50 per cent of its capacity in operation is booked for three months on that basis and may put on an additional stack this month. The Sloss-Sheffield Steel & Iron Co., which has three stacks in blast, will blow in its No. 3 North Birmingham furnace this week, thereby adding 350 tons a day to its output. This company also expects to have its No. 2 City furnace ready for operation within 60 days. Among consuming interests there is some improvement in operations and business prospects are regarded as bright.

We quote per gross ton, f.o.b. Birmingham district furnaces, as follows:

| | |
|---|---|
| No. 2 foundry, 1.75 to 2.25 sil | $18.00 |
| No. 1 foundry, 2.25 to 2.75 sil | 18.50 |
| Basic | 18.00 |
| Charcoal, warm blast | 30.00 |

**Rolled Steel.**—Mills have resumed operations at the rate that prevailed prior to the holidays. There is a steady flow of shipments, particularly of rails. A round tonnage of export business is moving out of this district, and water deliveries of several thousand tons of steel to the southeast coast of Florida are a feature of the market. In this immediate district there is a betterment in demand, particularly for plates and sheets. The Tennessee Coal, Iron & Railroad Co. has completed improvements at its Bessemer, Ala., plant for the rolling of lighter forms of steel, including cotton ties, and is pushing work at Fairfield, Ala., on additional capacity in spikes, bolts and nuts. Demand for wire and nails is fair despite the less favorable agricultural situation. Mill prices are unchanged.

**Cast Iron Pipe.**—Demand is slow, and prices on pressure pipe are weak at $37 per net ton, Birmingham, for 6-in. and larger diameters. Pipe shops have resumed operations, although not at maximum output. The production of soil pipe is still below normal, al-

though two or three of the larger makers are running at a fair rate. Warehouse stocks of soil pipe and fittings are large.

**Coke.**—The operations of by-product coke ovens are still at a curtailed rate, but the output of foundry coke is expected to reach average proportions before the end of the month. Prices on foundry coke are 50c. a ton lower, ranging from $5 to $5.50, Birmingham. Coal production in Alabama is heavy, exceeding 400,000 tons weekly.

**Old Material.**—There is a fair volume of sales, especially of heavy melting steel and cast scrap, but prices remain weak. Consumers of heavy melting steel are pressing for deliveries. Dealers are encountering no difficulty in obtaining all the material they need, and yard forces are well maintained. Heavy melting steel is still held at $13 to $14 per ton. Sales are in small lots, since consumers believe that supplies are ample and that prices will not advance.

We quote per gross ton, f.o.b. Birmingham district yards, as follows:

| | |
|---|---|
| Cast iron borings, chemical | $15.00 to $16.00 |
| Heavy melting steel | 13.00 to 14.00 |
| Railroad wrought | 11.00 to 12.00 |
| Steel axles | 17.00 to 18.00 |
| Iron axles | 17.00 to 18.00 |
| Steel rails | 13.00 to 14.00 |
| No. 1 cast | 16.00 to 17.00 |
| Tramcar wheels | 16.50 to 17.50 |
| Carwheels | 16.00 to 16.50 |
| Stove plate | 14.00 to 14.50 |
| Machine shop turnings | 8.00 to 8.50 |
| Cast iron borings | 8.00 to 8.50 |
| Rails for rolling | 15.00 to 16.00 |

# St. Louis

## Pig Iron Shipments Gain—Warehouses Enjoy Good Business with Oil Fields

ST. LOUIS, Jan. 11.—Shipments of pig iron have increased considerably since the first of the year, foundries having let their stocks run down on account of inventories. However, very little new business has been placed, since melters generally in this district are fairly well covered on their requirements for first quarter and furnaces are not inclined to take on business for second quarter on account of the uncertainty of the coal situation. The St. Louis Coke & Iron Corporation sold about 3000 tons during the week, including 2500 tons to an Illinois melter. An East Side manufacturer is in the market for 2000 tons of malleable, and a car builder in the district wants 1000 tons of foundry iron. Prices are unchanged.

We quote delivered consumers' yards, St. Louis, as follows, having added to furnace prices $2.16 freight from Chicago, $4.42 from Birmingham, all rail, and 81c. average switching charge from Granite City:

| | |
|---|---|
| Northern fdy., sil. 1.75 to 2.25 | $22.16 |
| Northern malleable, sil. 1.75 to 2.25 | 22.16 |
| Basic | 22.16 |
| Southern fdy., sil. 1.75 to 2.25 | 22.42 |
| Granite City iron, sil. 1.75 to 2.25 | $22.31 to 22.81 |

**Finished Iron and Steel.**—Interest among fabricators centers in the 27-story Missouri Pacific Building, St. Louis. For the foundation of the first unit, 400 tons of reinforcing bars went to the Sheffield Steel Corporation, and it is expected that plans covering the structural steel will be out this week. Warehouse interests report that December proved to be one of the best months of 1926 and that bookings for the first 10 days in January have been very heavy. Business is coming mostly from the oil fields.

**Coke.**—As with pig iron, specifications against contracts have been considerably heavier since the inventory period ended, but not much new business is being placed for foundry coke. The demand for domestic grades is keeping up with that of the last few weeks.

**Old Material.**—Activity in iron rails took a spurt during the week, the prices paid by dealers jumping $2 a ton to a range of $13 to $13.50 a ton. The advance is due to the fact that for the first time in about two years there is a demand for them as such from rolling mills. In the interim dealers have been cutting them up into melting steel. Steel angle bars are up 25c. a ton, and iron car axles have advanced 50c. a ton. Heavy melting grades are unchanged, and there is very little buying by the mills. Dealers continue to purchase in anticipation of a buying movement and higher prices. Railroad lists include: Southern Railway, 6450 tons; Chesapeake & Ohio, 9200 tons; Great Northern, 2400 tons; Texas & Pacific, 1630 tons; Wabash, 3200 tons; Chicago & Eastern Illinois, 1000 tons; Pennsylvania, 850 tons of 50, 60 and 85-lb. relaying rails; Kansas City Southern, 350 tons, and Pullman Co., St. Louis, 200 tons.

We quote dealers' prices f.o.b. consumers' works, St. Louis industrial district and dealers' yards, as follows:

| | |
|---|---|
| *Per Gross Ton* | |
| Iron rails | $13.00 to $13.50 |
| Rails for rolling | 15.50 to 16.00 |
| Steel rails less than 3 ft. | 16.00 to 16.50 |
| Relaying rails, 60 lb. and under | 20.50 to 23.50 |
| Relaying rails, 70 lb. and over | 26.50 to 29.00 |
| Cast iron carwheels | 14.50 to 15.00 |
| Heavy melting steel | 13.00 to 13.50 |
| Heavy shoveling steel | 13.00 to 13.50 |
| Frogs, switches and guards cut apart | 14.50 to 15.00 |
| Railroad springs | 15.50 to 16.00 |
| Heavy axle and tire turnings | 10.50 to 11.00 |
| No. 1 locomotive tires | 16.25 to 16.75 |
| *Per Net Ton* | |
| Steel angle bars | 12.50 to 13.00 |
| Steel car axles | 17.25 to 17.75 |
| Iron car axles | 21.00 to 21.50 |
| Wrought iron bars and transoms | 18.00 to 18.50 |
| No. 1 railroad wrought | 10.75 to 11.25 |
| No. 2 railroad wrought | 11.75 to 12.25 |
| Cast iron borings | 9.00 to 9.50 |
| No. 1 busheling | 10.25 to 10.75 |
| No. 1 railroad cast | 14.25 to 14.75 |
| No. 1 machinery cast | 16.75 to 17.25 |
| Railroad malleable | 12.50 to 13.00 |
| Machine shop turnings | 6.25 to 6.75 |
| Bundled sheets | 8.00 to 8.50 |

**Warehouse Prices, f.o.b. St. Louis**

| | Base per Lb. |
|---|---|
| Plates and structural shapes | 3.25c. |
| Bars, mild steel or iron | 3.15c. |
| Cold-finished rounds, shafting and screw stock | 3.75c. |
| No. 24 black sheets | 4.45c. |
| No. 10 blue annealed sheets | 3.60c. |
| No. 24 galvanized sheets | 5.25c. |
| Black corrugated sheets | 4.65c. |
| Galvanized corrugated sheets | 5.30c. |
| Structural rivets | 3.65c. |
| Boiler rivets | 3.85c. |
| | **Per Cent Off List** |
| Tank rivets, ⅞-in. and smaller | 70 |
| Machine bolts | 50 and 5 |
| Carriage bolts | 47½ |
| Lag screws | 55 and 5 |
| Hot-pressed nuts, square, blank or tapped | 3.25c. off per lb. |
| Hot-pressed nuts, hexagons, blank or tapped | 3.75c. off per lb. |

# Boston

## Pig Iron and Scrap Sales Are Small—Gas Pipe Demand Active

BOSTON, Jan. 11.—Pig iron sales in the past week approximated 3000 tons, divided about equally among the Mystic, western Pennsylvania, Buffalo and New York State furnaces at delivered prices equivalent to $18 to $19, base Buffalo, mostly $18 to $18.75. Business is still a matter of solicitation, open inquiry being small. The inquiry of the Sullivan Machinery Co., Claremont, N. H., for 200 tons each of 1.75 to 2.25 per cent and 2 to 2.50 per cent silicon iron is the largest open business. Within the next few days one furnace expects to book privately an order for 2000 tons of No. 2X and No. 1X from one source and 750 tons of No. 1X from another foundry. A broker has submitted offers on several hundred tons to a furnace at slightly under prevailing prices. Eastern Pennsylvania furnaces have reduced prices 50c. a ton, but they are still out of line with Northern furnace quotations.

We quote delivered prices per gross ton to most New England points as follows, having added $3.65 freight from eastern Pennsylvania, $4.91 from Buffalo, $5.92 from Virginia, and $6.91 to $8.77 from Alabama:

| | |
|---|---|
| East. Penn., sil. 1.75 to 2.25 | $25.15 to $25.65 |
| East. Penn., sil. 2.25 to 2.75 | 25.65 to 26.15 |
| Buffalo, sil. 1.75 to 2.25 | 22.91 to 23.91 |
| Buffalo, sil. 2.25 to 2.75 | 23.41 to 24.41 |
| Virginia, sil. 1.75 to 2.25 | 28.42 to 29.92 |
| Virginia, sil. 2.25 to 2.75 | 28.92 to 30.42 |
| Alabama, sil. 1.75 to 2.25 | 24.91 to 26.77 |
| Alabama, sil. 2.25 to 2.75 | 25.41 to 27.27 |

**Finished Material.**—Business in all finished materials is looking up and is running ahead of a year ago. Although early in the year, it is commonly predicted New England will consume more steel mill products in 1927 than in 1926. At the moment prospective fabricating jobs are few, but indications are that building will become active when weather conditions permit. Less price cutting is noted among fabricators than heretofore.

**Cast Iron Pipe.**—Boston has not yet placed an order for the 3000 tons of pipe on which bids were recently opened. Current activity in water pipe is confined to small lots placed privately, which in the aggregate form a fair total. The Worcester Gas Light Co., Worcester, Mass., has placed 2000 tons of pipe with an American foundry, bringing total sales of gas pipe in this territory in the past two or three weeks to around 15,000 tons. Foundries are inclined to hold to schedule prices on small sizes, but the market for large pipe is still unsettled. Prices quoted on domestic pipe are: 4-in., $59.10 a ton, delivered common Boston freight rate points; 6 to 12-in., $54.10 to $55.10; larger pipe, $53.10 to $54.10. A $5 differential is asked on Class A and gas pipe.

**Old Material.**—There has been no appreciable increase in the movement of old material out of New England. There is a fairly good market for melting steel for eastern Pennsylvania delivery, but because of recent heavy rejections by mills and consequent reductions in prices on rejections ranging from $2 to $3.50 a ton, few are willing to ship. Yard steel, however, is offered freely, but mills are taking little. A fair tonnage has been taken by a Pennsylvania plate mill at $8.60 to $9, on cars here. Other sales made in the past week include a fair tonnage of short bundled cotton ties and skeleton at $8.60, shipping point, and chemical borings at $14.50, delivered New Jersey. A small tonnage of textile machinery cast was bought by New England foundries at $18.75 to $19 a ton, delivered.

The following prices are for gross-ton lots, delivered at consuming points:

| | |
|---|---|
| Textile cast | $18.00 to $19.00 |
| No. 1 machinery cast | 18.00 to 18.50 |
| No. 2 machinery cast | 16.50 to 17.00 |
| Stove plate | 13.00 to 13.25 |
| Railroad malleable | 18.50 to 19.00 |

The following prices are offered per gross-ton lots, f.o.b. Boston rate shipping points:

| | |
|---|---|
| No. 1 heavy melting steel | $10.50 to $11.00 |
| No. 1 railroad wrought | 12.00 to 12.25 |
| No. 1 yard wrought | 11.00 to 11.25 |
| Wrought pipe (1 in. in diameter, over 2 ft. long) | 9.00 to 9.50 |
| Machine shop turnings | 7.50 to 8.00 |
| Cast iron borings, chemical | 10.50 to 11.00 |
| Cast iron borings, rolling mill | 8.00 to 8.50 |
| Blast furnace borings and turnings | 8.00 to 8.50 |
| Forged scrap | 8.00 to 8.50 |
| Bundled skeleton, long | 8.00 to 8.50 |
| Forged flashings | 8.00 to 8.50 |
| Shafting | 15.50 to 16.00 |
| Street car axles | 16.00 to 16.50 |
| Rails for rerolling | 11.50 to 12.00 |
| Scrap rails | 10.50 to 11.00 |

**Ore Imports.**—Receipts of ore at this port during December totaled 23,939 tons, made up of 7179 tons of Scandinavian, 10,260 tons of Newfoundland and 6500 tons of Ouenza. Importations started in June, 1926. Those for the seven months ended with December aggregated 153,666 tons. In addition to imports, approximately 500 tons of Champlain ore has been received here.

**Coke.**—Interest in by-product coke centers largely in domestic sizes, for which there is a big demand. New England ovens are behind on deliveries. Foundry coke is moving at a better rate than a month ago, but the market is far from active. New England ovens are still selling by-product foundry coke at $13.50 a ton, delivered, within a $3.10 freight rate zone, and Connellsville ovens at 50c. to $1 a ton less.

**Warehouse Prices, f.o.b. Boston**

| | Base per Lb. |
|---|---|
| Soft steel bars and small shapes | 3.265c. |
| Flats, hot-rolled | 4.15c. |
| Reinforcing bars | 3.265c. to 3.54c. |
| Iron bars— | |
| Refined | 3.265c. |
| Best refined | 4.60c. |
| Norway, rounds | 6.60c. |
| Norway, squares and flats | 7.10c. |
| Structural shapes— | |
| Angles and beams | 3.365c. |
| Tees | 3.365c. |
| Zees | 3.465c. |
| Plates | 3.365c. |
| Spring steel— | |
| Open-hearth | 5.00c. to 10.00c. |
| Crucible | 12.00c. |
| Tire steel | 4.50c. to 4.75c. |
| Bands | 4.015c. to 5.00c. |
| Hoop steel | 5.50c. to 6.00c. |
| Cold rolled steel— | |
| Rounds and hexagons | 4.05c. |
| Squares and flats | 4.55c. |
| Toe calk steel | 6.00c. |

# Cincinnati

## Drop in Southern Iron Puts It in Competitive Position—Steel Demand Lags

CINCINNATI, Jan. 11.—An unexpected drop of $2 a ton in the price of Southern iron is the outstanding development in the local market. For the first time since February, 1925, foundry iron from the Birmingham district is quoted at a lower delivered price in Cincinnati than southern Ohio iron. The new schedule of $18, base Birmingham, puts the product of Southern furnaces into this city at $21.69, whereas the Ironton quotation is $20, base furnace, or $21.89, delivered Cincinnati. It is understood that the desire to stimulate buying by pipe companies in the South rather than the purpose of competing in Northern markets was responsible for the action taken both by Alabama and Tennessee producers. Even at $18, base Birmingham, Southern interests cannot hope to go north of Cincinnati and Louisville, because of a disadvantage in freight rates compared with Northern furnaces. In fact, their delivered price in Cincinnati is considerably higher than that made by Lake furnaces, which are quoting $20.90. What action will be taken by Ironton producers to meet the present situation has not yet been determined, although a decrease of at least 50c. a ton to $19.50, base furnace, is anticipated. The surprising development in the Southern market has had the effect of holding up purchases by consumers, who are inclined to postpone buying until southern Ohio sellers make known their future course. Some foundries that have been offered Southern iron at the new schedule have refused to contract for it, because they now are using all Northern iron in their melt and before again changing over to a mix including Southern iron they want some assurance that there will not be another upward swing in the price of Alabama iron in the next few months. Such assurance, of course, cannot be given by dealers, and consequently sales of Southern iron at $18, base Birmingham, have been meager. Aside from an inquiry from a local melter for from 2000 to 3000 tons of foundry iron, inquiries are confined to small lots, ranging from single carloads up to 100 tons.

Based on freight rates of $3.69 from Birmingham and $1.89 from Ironton, we quote f.o.b. Cincinnati:

| | |
|---|---|
| Alabama fdy., sil. 1.75 to 2.25 (base) | $21.69 |
| Alabama fdy., sil. 2.25 to 2.75 | 22.19 |
| Tennessee fdy., sil. 1.75 to 2.25 | 21.69 |
| Southern Ohio silvery, 8 per cent. | 30.39 |
| So. Ohio fdy., sil. 1.75 to 2.25 | 21.89 |
| So. Ohio malleable | 21.39 |

**Finished Material.**—Following the let-down during the Christmas holiday period, business has been slow in getting under way again. Many consuming industries have failed to increase production schedules and, therefore, their demands for iron and steel have been light. Despite the quietness that prevails throughout this territory, there is an underlying tone of optimism, which reveals itself in the attitude of both buyers and sellers. The consensus of opinion is that specifications and orders will gradually grow in volume during the first two months of 1927 until a satisfactory level of business is attained in March. Inventory-taking apparently has extended considerably beyond the first of the year, and few consumers are yet prepared to place first quarter tonnage unless they need material for immediate needs. Reports from the South indicate

that industrial conditions there are about normal for this time of the year. Stove manufacturers, in particular, have enjoyed a prosperous business, and indications are that there will be no diminution in sales this year. Prices in general are looked upon as being firm, resistance to further concessions having developed among sheet producers. Black sheets are quoted at 3c., base Pittsburgh, and galvanized at 3.85c., base Pittsburgh, although there are isolated cases in which lower prices have been named. Blue annealed sheets are firm at 2.30c., base Pittsburgh. Demand for bars is consistently good at 2c., base Pittsburgh. Tank plates are showing strength at 1.90c., base Pittsburgh, even though orders have been below normal. In the wire goods market, consumers are apathetic in their attitude, and little buying of consequence has materialized since Jan. 1.

**Reinforcing Bars.**—The market is quiet at the moment. Few important jobs are expected to appear in the next two weeks. Meanwhile, new billet bars remain nominally at 2c., base Pittsburgh, and rail steel bars at 1.90c., base mill.

**Warehouse Business.**—Sales in the past week have lagged, the after effects of the year-end lull still being felt. Jobbers, however, are anticipating better business during the coming week. Prices of all products are firm and unchanged.

**Old Material.**—There has been a slight improvement in the past week, but most mills, both in this and in the Valley district, have not yet resumed the acceptance of material on contract. Considerable tonnage is being offered by railroads this week. Prices are unchanged.

We quote dealers' buying prices, f.o.b. cars, Cincinnati:

| | |
|---|---|
| *Per Gross Ton* | |
| Heavy melting steel | $12.50 to $13.00 |
| Scrap rails for melting | 12.50 to 13.00 |
| Short rails | 17.50 to 18.00 |
| Relaying rails | 26.50 to 27.00 |
| Rails for rolling | 14.00 to 14.50 |
| Old carwheels | 12.00 to 12.50 |
| No. 1 locomotive tires | 16.50 to 17.00 |
| Railroad malleable | 14.50 to 15.00 |
| Agricultural malleable | 13.50 to 14.00 |
| Loose sheet clippings | 7.00 to 7.50 |
| Champion bundled sheets | 8.50 to 9.00 |
| *Per Net Ton* | |
| Cast iron borings | 7.50 to 8.00 |
| Machine shop turnings | 7.00 to 7.50 |
| No. 1 machinery cast | 17.00 to 18.00 |
| No. 1 railroad cast | 14.00 to 14.50 |
| Iron axles | 19.50 to 20.00 |
| No. 1 railroad wrought | 9.00 to 9.50 |
| Pipes and flues | 7.50 to 8.00 |
| No. 1 busheling | 9.00 to 9.50 |
| Mixed busheling | 5.50 to 6.00 |
| Burnt cast | 6.50 to 7.00 |
| Stove plate | 9.00 to 9.50 |
| Brake shoes | 9.50 to 10.00 |

**Coke.**—The market still shows signs of weakness. While foundry coke specifications have increased somewhat, the demand for domestic grades is at a low point. Wage reductions in the Wise County field have caused at least one company to decrease its schedule both on foundry and furnace coke 58c. a ton. An Ironton, Ohio, blast furnace that has been buying beehive coke for a number of months has resumed the exclusive use of by-product furnace coke. The Peabody Coal Co. is reported to have completely shut down its beehive coke ovens at Hellier, Ky.

Based on freight rates of $2.14 from Ashland, Ky., and $2.59 from Wise County ovens and New River ovens, we quote f.o.b. Cincinnati: Wise County foundry, $7.59 to $8.09; New River foundry, $10.09 to $10.59; by-product foundry, $10.14.

**Warehouse Prices, f.o.b. Cincinnati**

| | Base per Lb. |
|---|---|
| Plates and structural shapes | 3.40c. |
| Bars, mild steel or iron | 3.30c. |
| Reinforcing bars | 3.30c. |
| Hoops | 4.00c. to 4.25c. |
| Bands | 3.95c. |
| Cold-finished rounds and hexagons | 3.85c. |
| Squares | 4.35c. |
| Open-hearth spring steel | 4.75c. to 5.00c. |
| No. 24 black sheets | 4.05c. |
| No. 10 blue annealed sheets | 3.60c. |
| No. 24 galvanized sheets | 4.90c. |
| Structural rivets | 3.75c. |
| Small rivets | 65 per cent off list |
| No. 9 annealed wire, per 100 lb | $3.00 |
| Common wire nails, base per keg | 2.95 |
| Cement coated nails, base per 100-lb. keg | 3.15 |
| Chain, per 100 lb | 7.55 |
| | Net per 100 Ft. |
| Lap welded steel boiler tubes, 2-in. | $18.00 |
| 4-in. | 38.00 |
| Seamless steel boiler tubes, 2-in. | 19.00 |
| 4-in. | 39.00 |

# Buffalo

## Pig Iron Market Awaits Test—Bar Prices Settle to Single Level

BUFFALO, Jan. 11.—No large inquiries have come out recently to test the pig iron market. An inquiry for 1000 tons from the Worthington Pump & Machinery Corporation is said to have been placed with producers outside this district. Several 200 and 100-ton lots are pending, making an aggregate of possibly 1000 tons. Some foundries here are working at about the same percentage of operation as before the holidays, but many of them are still taking inventory. The American Radiator Co. is running at 100 per cent. Foundry iron prices are holding at $19 and $20, base Buffalo, though it is reported that a considerable part of the iron booked by one maker here during December was taken at lower than these prices and it is possible that an interesting tonnage offered now might also bring out concessions from the general market.

We quote prices per gross ton, f.o.b. Buffalo, as follows:

| | |
|---|---|
| No. 2 plain fdy., sil. 1.75 to 2.25 | $19.00 to $20.00 |
| No. 2X foundry, sil. 2.25 to 2.75 | 19.50 to 20.50 |
| No. 1X foundry, sil. 2.75 to 3.25 | 20.50 to 21.50 |
| Malleable, sil. up to 2.25 | 20.00 |
| Basic | 19.00 |
| Lake Superior charcoal | 27.28 |

**Old Material.**—The market is not opening as well as had been anticipated. Only one of the large mills here is again accepting shipments of material, and dealers who had bought against the requirements of the other find themselves overstocked, weakening the market to that extent. Open-hearth operations are still low. One mill is operating only four out of nine furnaces, and another with four has one or two off. Increased activity in the automotive industry is expanding the production of turnings and borings. Dealers are paying $15 to $15.25 for heavy melting steel and $13.50 to $14 for No. 1 busheling to apply against orders taken at $16 and $14.50 respectively. Stove plate is rather active, and a lively demand by two of the foundries finds the supply scarce. Apparently dealers who have old orders of stove plate will not be able to fill them until spring, when the country scrap offerings begin to come in.

We quote prices per gross ton, f.o.b. Buffalo, as follows:

| | |
|---|---|
| Heavy melting steel | $15.00 to $15.50 |
| Selected No. 1 heavy melting steel | 16.50 to 17.00 |
| Low phosphorus | 18.00 to 19.00 |
| No. 1 railroad wrought | 14.00 to 14.50 |
| Carwheels | 16.00 to 16.50 |
| Machine shop turnings | 9.00 to 9.50 |
| Mixed borings and turnings | 12.00 to 12.50 |
| Cast iron borings | 12.00 to 12.50 |
| No. 1 busheling | 15.00 to 15.50 |
| Stove plate | 14.50 to 14.75 |
| Grate bars | 12.00 to 13.00 |
| Hand bundled sheets | 10.50 to 11.50 |
| Hydraulic compressed sheets | 15.00 to 15.50 |
| No. 1 machinery cast | 16.00 to 16.25 |
| Railroad malleable | 16.50 to 17.00 |
| Iron axles | 24.00 to 25.00 |
| Steel axles | 16.00 to 16.50 |
| Drop forge flashings | 13.00 to 13.50 |

**Finished Iron and Steel.**—The price of 2.365c., Buffalo, on bars seems to have disappeared, and 2.265c. is generally quoted. Some attractive bar tonnage is com-

**Warehouse Prices, f.o.b. Buffalo**

| | Base per Lb. |
|---|---|
| Plates and structural shapes | 3.40c. |
| Mild steel bars | 3.30c. |
| Cold-finished shapes | 4.45c. |
| Rounds | 3.95c. |
| No. 24 black sheets | 4.30c. |
| No. 10 blue annealed sheets | 3.80c. |
| No. 24 galvanized sheets | 5.15c. |
| Common wire nails, base per keg | $3.90 |
| Black wire, base per 100 lb | 3.90 |

ing out. Shapes are quoted at 2.265c., Buffalo, and plates at 2.165c. Elevators for the International Milling Co. at Buffalo, calling for 700 tons of rerolled reinforcing steel, were let last week. A steel fabricator took a plant addition at Niagara Falls requiring 125 tons of structural steel. The sheet market is brighter.

## Canadian Scrap Market Recovers Slowly

TORONTO, ONT., Jan. 11.—The Canadian scrap market has not fully recovered from the effects of the recent holiday season. While sales for the past week exceeded those of the two previous weeks, consumers are buying in limited tonnages. Inquiries on first quarter account and some on second have been received, and a number of contracts have already been closed for the next three months. The greater part of current demand, however, is from consumers who need material for immediate consumption. The daily melt is from 10 to 20 per cent above that of a year ago, and indications are that it will go still higher. Foundries are now operating around 60 per cent, and mills as high as 70 to 80 per cent capacity, with the exception of the Algoma Steel Corporation, Sault Ste. Marie, Ont., which curtailed operations about a month ago. Dealers' buying prices are firm as follows:

| | Toronto | Montreal |
|---|---|---|
| *Per Gross Ton* | | |
| Steel turnings | $8.50 | $8.00 |
| Machine shop turnings | 8.50 | 7.00 |
| Wrought pipe | 6.00 | 6.00 |
| Rails | 11.00 | 10.00 |
| No. 1 wrought | 11.00 | 14.00 |
| Heavy melting steel | 11.00 | 9.00 |
| Steel axles | 16.00 | 17.00 |
| Axles, wrought iron | 18.00 | 19.00 |
| Boiler plate | 10.00 | 8.00 |
| Heavy axle turnings | 9.00 | 8.50 |
| Cast borings | 8.50 | 7.50 |
| *Per Net Ton* | | |
| Standard carwheels | 15.00 | 16.00 |
| Malleable | 14.00 | 14.00 |
| Stove plate | 10.00 | 13.00 |
| No. 1 machinery cast | 16.00 | 18.00 |

## RAILROAD EQUIPMENT

The Santa Fe has ordered 2800 cars, the Rock Island 2500, the Northwestern Refrigerator Co. 1020 and the orders of the Missouri Pacific, mentioned last week, have been increased to 3120 cars. Other smaller orders bring the total for the past two weeks to 10,065 cars. The Santa Fe has ordered 25 locomotives. Details of the week's business follow:

The Santa Fe has placed 25 locomotives with the Baldwin Locomotive Works. This road has also placed orders for 2800 cars as follows: 500 refrigerator and 300 gondola cars with the American Car & Foundry Co., 500 refrigerator and 500 box cars with the Pullman Car & Mfg. Corporation, 500 box cars with the General American Car Co. and 500 box cars with the Standard Steel Car Co.

The Northwestern Refrigerator Co. has awarded 1020 refrigerator cars to the American Car & Foundry Co.

The Mobile & Ohio has placed orders for 250 flat, 150 hopper and 200 gondola cars with the Tennessee Coal, Iron & Railroad Co.

The complete distribution of cars ordered by the Missouri Pacific Railroad, totaling 3120, is as follows: 500 40-ton box, 500 50-ton automobile furniture and 250 stock cars to the American Car & Foundry Co.; 750 50-ton automobile cars to the General American Car Co.; 750 40-ton automobile, 100 gondolas and 20 caboose cars to the Mount Vernon Car & Mfg. Co.; 250 hopper cars to the Standard Steel Car Co.

The Chicago, Rock Island & Pacific has bought 1750 freight cars and passenger equipment, the orders being divided as follows: 500 40-ton box cars to the American Car & Foundry Co.; 500 box cars and 500 gondolas to the Bettendorf Co.; 500 automobile box cars to the Standard Steel Car Co.; 250 ballast cars to the Pressed Steel Car Co.; 250 flat cars to Ryan Car Co.; 10 70-ft. baggage cars, 4 70-ft. baggage-mail cars and 4 70-ft. baggage-smoking cars to the American Car & Foundry Co.; 40 suburban coaches to the Standard Steel Car Co.; 5 dining cars and 10 coaches to the Pullman Car & Mfg. Corporation.

The Chicago, Burlington & Quincy has ordered 10 coaches, 8 chair cars and 1 passenger-baggage-mail car from the Pullman Car & Mfg. Corporation, and is inquiring for 1000 40-ton box cars.

The Rodger Ballast Car Co. has ordered 25 all-steel ballast cars from the American Car & Foundry Co.

The Wabash is in the market for 1000 automobile cars.

The New York Central has awarded 31 passenger cars to the Pullman Car & Mfg. Corporation.

The Norfolk & Western has placed 3 passenger cars with the Pullman Car & Mfg. Corporation.

## REINFORCING STEEL

Concrete reinforcing bar awards, as reported in the following items, total upward of 6000 tons and new projects up for bids call for 5600 tons. Most of the jobs are small. Awards follow:

CHICAGO, 100 tons of rail steel, Junior Terrace Apartments, to Olney J. Dean & Co.

PHILADELPHIA, 620 tons, public school at Eighteenth and Chelton Streets, to A. Taylor & Co.

BUFFALO, 700 tons of rail steel, elevators for International Milling Co., to Buffalo Steel Co.

ASHTABULA, OHIO, highway bridge for Ohio State Highway Commission, to Bourne-Fuller Co.

CHICAGO, 600 tons of rail and new billet steel bars, office building at Wells and Monroe Streets, to Kalman Steel Co.

CHICAGO, 200 tons of rail steel, Midland Building, to Kalman Steel Co.

CHICAGO, 180 tons, tuberculosis sanitarium, to Concrete Steel Co.

OGLESBY, ILL., 100 tons of rail steel, building for the Marquette Cement Mfg. Co., to Calumet Steel Co.

DES MOINES, IOWA, 170 tons, junior high school, to Concrete Steel Co.

ST. LOUIS, 400 tons, foundation for Missouri Pacific Building, to Sheffield Steel Corporation.

TURLOCK, CAL., 175 tons, Don Pedro power plant for the Turlock and the Modesto Irrigation Districts, to E. L. Soule Co., San Francisco.

SAN JOSE, CAL., 120 tons, Medico-Dental Building, to an unnamed San Francisco jobber.

OAKLAND, 120 tons, crematory, to an unnamed San Francisco jobber.

OAKLAND, 250 tons, theater, to an unnamed San Francisco jobber.

SAN FRANCISCO, 200 tons, apartment building, to an unnamed local jobber.

SAN FRANCISCO, 200 tons, hospital addition, to an unnamed local jobber.

SEATTLE, WASH., 200 tons, studio building, to Mercer Steel Products Co., Seattle.

CHICAGO, 200 tons, apartment building at 20 East Delaware Avenue, to Truscon Steel Co.

CHICAGO, 100 tons, Dunn warehouse, to Concrete Engineering Co.

CHICAGO, 100 tons, Farwell Building, to Concrete Steel Co.

ST. LOUIS, 350 tons, St. Louis high school stadium, to Laclede Steel Co.

SEATTLE, WASH., 175 tons, store, to Pacific Coast Steel Co.

SAN MATEO, CAL., 100 tons, monastery, to Badt-Falk & Co., San Francisco.

OAKLAND, CAL., 130 tons, warehouse for Davis & Parker, to Gunn, Carle & Co., San Francisco.

LYNN, MASS., 300 tons, sewage disposal plant, to Concrete Steel Co.

OSSINING, N. Y., 100 tons, addition to Sing Sing prison, to Concrete Steel Co.

AKRON, OHIO, 140 tons, building for Firestone Tire & Rubber Co., to Bourne-Fuller Co.

### Reinforcing Bars Pending

Inquiries for reinforcing steel bars include the following:

JERSEY CITY, 500 tons, approach to New York-New Jersey vehicular tunnel, New Jersey State Highway Commission; Montrose Contracting Co., general contractor.

MADISON, WIS., 225 tons, building for the University of Wisconsin; J. P. Collen, Jamesville, Wis., general contractor.

ELLENSBURG, WASH., 950 tons, for the Kittatus Canal; Ross Construction Co., Los Angeles, low bidder.

STATE OF NEW JERSEY, 500 tons, for Route No. 1 of State highway.

AKRON, OHIO, 850 tons, M. O'Neil Co. department store, previously reported as 400 tons.

CINCINNATI, 250 tons, Ninth Street Garage.

NEWARK, N. J., 340 tons, addition to L. Bamberger & Co.

STATE OF NEW JERSEY, 100 tons, two bridges over Shark River.

NORWOOD, MASS., 100 tons, municipal memorial building.

PHILADELPHIA, 300 tons, foundation of office building for Philadelphia-Fidelity Trust Co., Broad Street.

CHICAGO, 500 tons, office building at Wells and Van Buren Streets; L. Balkin, contractor.

SAN DIEGO, CAL., 525 tons to 1277 tons, for construction of the Sutherland dam.

SEATTLE, WASH., 500 tons, Rhodes department store.

# OBITUARY

JAMES L. BRIERTON, vice-president and general manager of the Central Iron & Coal Co., Holt., Ala., and vice-president and general manager in charge of southern operations for the Central Foundry Co., both subsidiaries of the Universal Pipe & Radiator Co., New York, died Dec. 23 in Birmingham. He was born at Irondale, Mo., in 1875, and began his business career as a telegraph operator with the Iron Mountain Railroad. In 1900 he entered the employ of the Tennessee Coal, Iron & Railroad Co. at Ensley, Ala., remaining there until 1906. In that year he was made assistant to the vice-president of the Central Iron & Coal Co., Holt, Ala., retaining that position until 1915, when he became operating manager of the Alabama & New Orleans Transportation Co., operator of self-propelled barges on the Warrior River. During the World War he had charge of the construction of steel oil tank vessels for service between the United States and Mexico. Returning to the Central Iron & Coal Co. in 1920, he became assistant to the vice-president and general manager, succeeding a year later to the position held at the time of his death. During the last year he was made vice-president and general manager in charge of southern operations for the Central Foundry Co.

J. L. BRIERTON

—

WILLIAM GOODWIN, superintendent Leland & Gifford Co., Worcester, Mass., died at his home in that city Dec. 31. He was born at Providence, R. I., but had lived in Worcester for 40 years, for the past 18 years having been superintendent for Leland & Gifford. Previous to that he was associated with Prentice Brothers.

—

JOHN CURTIS PATTERSON, consulting engineer, Philadelphia, died on Jan. 6 at his home in that city, aged 69 years. He was chief engineer for the Baltimore & Cumberland Railroad, the Pittsburgh & Eastern Railroad and the Port of Ecuador, and had been prominent in a number of large South American engineering projects.

—

MARVIN E. GRISWOLD, president of the Griswold Mfg. Co., Erie, Pa., died on Jan. 3 at his home in that city. During his entire business life he had been actively engaged in the industry of western Pennsylvania.

—

LOUIS LEWIS, president of the Central Automatic Sprinkler Co., Philadelphia, died in that city on Dec. 28. He was in his seventy-ninth year.

—

HENRY T. COCHRAN, for many years a director of the Washington Coal & Coke Co., Dawson, Pa., died on Dec. 28, aged 70 years.

—

WILLIAM K. PRUDDEN, founder of the Prudden Wheel Co., Lansing, Mich., a division of the Motor Wheel Corporation, died on Dec. 29 at Coronado Beach, Cal. He achieved considerable success in early life as a manufacturer of light buggy wheels and wheels for racing sulkies, but became interested in the automotive infigures. He was also well known as a philanthropist, one of his largest gifts having been the Prudden Auditorium at Lansing.

—

JOHN B. SCHEIBLY, president McIlvain & Spiegel Boiler & Tank Co., Cincinnati, died recently at his home in that city. He was 75 years of age and had been identified with the company for many years.

—

AUGUST W. MARGEDANT, president Central Foundry Co., Hamilton, Ohio, died suddenly of heart disease at his home Jan. 6, aged 57 years. For many years he had been active in the civic affairs of Hamilton, and during the Spanish-American War he organized and commanded Co. E, Ohio National Guard.

—

WALTER W. COX, of W. W. Cox & Co., metallurgist and analytical chemist, St. Louis, died suddenly at his home in that city on Jan. 4. He was born at Bethlehem, Pa., in 1875 and was graduated from the University of Pennsylvania. His offices were established in St. Louis 12 years ago.

—

GEORGE MATHESON, JR., vice-president, treasurer and general manager Spang, Chalfant & Co., Inc., Pittsburgh, died at his home in that city Dec. 30, after a month's illness. He was born at Etna, Pa., April 8, 1876, and early in life was associated with his father and with his grandfather, George Matheson, a pioneer in the pipe industry, in the management and operation of the American Tube & Iron Co., first at Middletown, Pa., and later at Youngstown, Ohio. When the company was merged with the National Tube Co. in 1900, he went to New York with the United States Steel Products Co. In 1905 he resigned to become chief clerk of Spang, Chalfant & Co., successively rising to the position he held at time of his death. He also was president and a director of the First National Bank, Etna, Pa., and a director of the Mackintosh-Hemphill Co., Pittsburgh.

—

C. E. GREEN, vice-president and general sales manager Midwest Air Filters, Inc., Bradford, Pa., died suddenly on Dec. 18.

—

GEORGE SIMPSON, for many years chief engineer of the Poole Engineering & Machine Co., Baltimore, died on Dec. 18, aged 79 years. He was born at Smithfield, Va., and at an early age became associated with his uncle, the late Robert Poole, in Poole & Hunt, afterward the Poole Engineering & Machine Co. Soon becoming chief engineer for this company, he occupied the position a number of years, but resigned in 1896 to become supervising engineer for the Farrel Foundry & Machine Co., Ansonia, Conn.

—

GEORGE E. CHRIST, superintendent of production Corbin Screw Corporation, New Britain, Conn., died at his home in that city on Dec. 28, aged 46 years. He had been associated with the Corbin company for nearly 30 years.

—

CAPT. JOHN A. STILLMAN, president Maryland Dry Dock Co., Baltimore, died on Jan. 9 at his home in that city. He was formerly naval constructor at the Boston Navy Yard, and during the World War was engaged in government fleet construction. He was 49 years of age and was graduated from the United States Naval Academy in 1900.

—

CHARLES I. BANKER, founder and for many years president of the C. I. Banker Wire & Iron Works, 213 Reed Street, Milwaukee, died recently at Culver City, Cal., where he had lived since his retirement from business several years ago. He was 68 years of age.

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ALLEN C. MCCULLOUGH, a salesman in the Chicago district office of the Illinois Steel Co., died on Jan. 8, aged 31 years. Following graduation from the school of engineering of the University of Wisconsin, he was employed in the mechanical and production departments at the Gary works of the Illinois company. After three years he was made chief clerk of the bar bureau in the Chicago office and had joined the sales organization some four months ago.

# NON-FERROUS METAL MARKETS

**The Week's Prices**

Cents per Pound for Early Delivery

| | Jan. 11 | Jan. 10 | Jan. 8 | Jan. 7 | Jan. 6 | Jan. 5 | Jan. 4 |
|---|---|---|---|---|---|---|---|
| Lake copper, New York | 13.25 | 13.25 | 13.25 | 13.25 | 13.25 | 13.25 | 13.50 |
| Electrolytic copper, N. Y.* | 13.00 | 13.00 | 12.87½ | 12.87½ | 12.87½ | 12.87½ | 13.00 |
| Straits tin, spot, New York | 66.87½ | 67.50 | .... | 67.45 | 67.00 | 66.87½ | 67.12½ |
| Lead, New York | 7.65 | 7.65 | 7.65 | 7.65 | 7.65 | 7.80 | 7.80 |
| Lead, St. Louis | 7.47½ | 7.47½ | 7.47½ | 7.47½ | 7.55 | 7.60 | 7.62½ |
| Zinc, New York | 7.20 | 7.22½ | 7.25 | 7.27½ | 7.27½ | 7.27½ | 7.32½ |
| Zinc, St. Louis | 6.85 | 6.87½ | 6.90 | 6.92½ | 6.92½ | 6.92½ | 6.97½ |

*Refinery quotation; delivered price ¼c. higher.

NEW YORK, Jan. 11.—Further reductions in the prices of copper, lead and zinc were registered last week. Copper is now a little firmer but demand is light. Very little improvement has taken place in lead or zinc. The tin market is fairly strong.

**Copper.**—The electrolytic copper market developed further weakness in the last week until quotations fell to 13.12½c., delivered in the Connecticut Valley. Very little business was done on the decline. Yesterday and today, however, the few producers who were selling metal at that level had evidently disposed of all they had at that price, because the lowest quotation today was 13.25c., delivered. There is a good deal more interest this week on the part of consumers, who are watching the course of the market very carefully. Some influence is expected from the publication in a few days of statistics for December and the year. The feature of the week was the rather drastic reduction in the quotation of Copper Exporters', Inc., on Jan. 5 from 13.85c. to 13.50c., c.i.f. Hamburg. The belief is strong that the market has reached rock bottom and that a turn for the better is due. Lake copper is quoted at 13.25c., delivered.

**Tin.**—Sales of tin for the past week have been about 1500 tons. Dealers, who were the principal buyers, shifted from one position to another, with some of them exceedingly active. Some individual houses did a business running into quite respectable figures. Consumers who were absent did very little buying. Late on Friday, Jan. 7, after a quiet day the market became active, largely because of a fear of a shortage in the first half of January. Dealers started to buy, with the result that the premium between spot and futures widened considerably. Yesterday the premium of spot over futures was 2c., but on Dec. 29 it was only ⅝c. Spot Straits tin today was quoted at 66.87½c., New York. In London today spot standard was quoted at £298 10s., future standard at £293 15s. and spot Straits at £305. The Singapore market today was £300 5s. Arrivals thus far this month have been 2265 tons, with 6480 tons reported afloat.

**Lead.**—Another sharp reduction was made by the American Smelting & Refining Co. last week in its contract price for lead from 7.80c. to 7.65c., New York. In the West the market is quoted at 7.47½c. to 7.50c., St. Louis. Consumption is good, but the market as a whole is by no means active. Production has increased so that stocks have expanded during the past month. It is stated in some quarters that frequently of late reductions have been made in the price of lead on each occasion when Mexican lead could easily enter the market.

**Zinc.**—The publication today of statistics for December have by no means been a bullish factor. These showed an increase of stocks of refined metal of about 7000 tons. Today prime Western is quoted at 6.85c., St. Louis, or 7.20c., New York, the decline having been progressive since last week. While galvanizers and some other consumers will probably have to buy more metal for January, they are in no hurry to do so.

**Antimony.**—Due to the troubles at Hankow, the principal port of shipment for Chinese antimony, the

### Metals from New York Warehouse

*Delivered Price per Lb.*

| | |
|---|---|
| Tin, Straits pig | 69.50c. to 70.50c. |
| Tin, bar | 71.50c. to 72.50c. |
| Copper, Lake | 14.50c. |
| Copper, electrolytic | 14.25c. |
| Copper, casting | 13.75c. |
| Zinc, slab | 7.75c. to 8.25c. |
| Lead, American pig | 8.40c. to 8.90c. |
| Lead, bar | 10.90c. to 11.90c. |
| Antimony, Asiatic | 15.50c. to 16.00c. |
| Aluminum, No. 1 ingot for remelting (guaranteed over 99 per cent pure) | 29.00c. to 30.00c. |
| Babbitt metal, commercial grade | 30.00c. to 40.00c. |
| Solder, ½ and ½ | 43.00c. to 44.00c. |

### Metals from Cleveland Warehouse

*Delivered Prices per Lb.*

| | |
|---|---|
| Tin, Straits pig | 72.50c. |
| Tin, bar | 74.50c. |
| Copper, Lake | 14.75c. |
| Copper, electrolytic | 14.75c. |
| Copper, casting | 14.25c. |
| Zinc, slab | 8.25c. |
| Lead, American pig | 8.50c. |
| Antimony, Asiatic | 17.50c. |
| Lead, bar | 10.50c. |
| Babbitt metal, medium grade | 21.25c. |
| Babbitt metal, high grade | 76.50c. |
| Solder, ½ and ½ | 43.75c. |

### Rolled Metals from New York or Cleveland Warehouse

*Delivered Prices, Base per Lb.*

| | |
|---|---|
| *Sheets*— | |
| High brass | 18.62½c. to 19.62½c. |
| Copper, hot rolled | 22.25c. to 23.25c. |
| Copper, cold rolled, 14 oz. and heavier | 24.50c. to 25.50c. |
| *Seamless Tubes*— | |
| Brass | 23.50c. to 24.50c. |
| Copper | 24.25c. to 25.25c. |
| *Brazed Brass Tubes* | 26.62½c. to 27.62½c. |
| *Brass Rods* | 16.37½c. to 17.37½c. |

**From New York Warehouse**

*Delivered Prices, Base per Lb.*

| | |
|---|---|
| *Zinc sheets (No. 9), casks* | 12.75c. to 13.00c. |
| *Zinc sheets, open* | 13.25c. to 13.50c. |

## Non-Ferrous Rolled Products

Mill prices on bronze, brass and copper products were reduced on Jan. 5 and are now ½c. below early December quotations. Zinc sheets were lowered ½c. by the mills on Jan. 10 and are now quoted on a base of 11c. Lead full sheets have not changed since the last week of December.

*On Copper and Brass Products, Freight up to 75c. per 100 Lb. Allowed on Shipments of 500 Lb. or Over*

| | |
|---|---|
| *Sheets*— | |
| High brass | 18.12½c. |
| Copper, hot rolled | 21.75c. |
| Zinc | 11.00c. |
| Lead (full sheets) | 11.50c. to 11.75c. |
| *Seamless Tubes*— | |
| High brass | 23.00c. |
| Copper | 23.75c. |
| *Rods*— | |
| High brass | 15.87½c. |
| Naval brass | 18.62½c. |
| *Wire*— | |
| Copper | 15.12½c. |
| High brass | 18.62½c. |
| *Copper in Rolls* | 20.62½c. |
| *Brazed Brass Tubing* | 26.12½c. |

**Aluminum Products in Ton Lots**

*The carload freight rate is allowed to destinations east of the Mississippi River and also allowed to St. Louis on shipments to destinations west of that river.*

| | |
|---|---|
| Sheets, 0 to 10 gage, 3 to 30 in. wide | 37.50c. |
| Tubes, base | 48.00c |
| Machine rods | 34.00c |

**Rolled Metals, f.o.b. Chicago Warehouse**

*(Prices Cover Trucking to Customers' Doors in City Limits)*

| *Sheets*— | Base per Lb. |
|---|---|
| High brass | 18⅛c. |
| Copper, hot rolled | 21.75c. |
| Copper, cold rolled, 14 oz. and heavier | 24.00c. |
| Zinc | 12.25c. |
| Lead, wide | 11.25c. |
| *Seamless Tubes*— | |
| Brass | 23.00c. |
| Copper | 23.75c. |
| *Brazed Brass Tubes* | 26⅛c. |
| *Brass Rods* | 15⅞c. |

market is somewhat nervous and higher and the metal is quoted at 14c., New York, duty paid, for spot and future shipment.

**Nickel.**—Wholesale lots of ingot nickel are quoted at 35c. with shot nickel at 36c. and electrolytic nickel at 39c. per lb.

**Aluminum.**—Virgin metal, 98 to 99 per cent pure, is quoted at 26.50c. to 27c. per lb., delivered.

**Non-Ferrous Metals at Chicago**

JAN. 11.—This market is quiet, and the prices of lead and zinc are easier. Antimony has advanced as the result of a dropping off of shipments from China. The old metal market is without feature and prices are weak.

We quote in carload lots: Lake copper, 13.60c.; tin, 69.50c.; lead, 7.75c.; zinc, 7.05c.; in less than carload lots, antimony, 15.25c. On old metals we quote copper wire, crucible shapes and copper clips, 10.75c.; copper bottoms, 9.50c.; red brass, 9.25c.; yellow brass, 7.50c.; lead pipe, 6.50.; zinc, 4.75c.; pewter, No. 1, 35c.; tin foil, 43.50c.; block tin, 52c.; aluminum, 16.50c.; all being dealers' prices for less than carload lots.

## New Metallurgical Process for Aluminum Scrap Recovery

CINCINNATI, Jan. 11.—The sale of the sole rights to use a new process for the recovery of scrap aluminum was made today by Dr. Robert J. Anderson, specialist on the metallurgy of aluminum, to Aluminum Industries, Inc., Cincinnati, producers of secondary aluminum and aluminum alloys. Doctor Anderson is president of Robert J. Anderson, Inc., chemists, metallurgists and consulting engineers, 2416 Beekman Street, Cincinnati.

The new process has been developed as a result of systematic research carried out during the past 10 years, and has special application in the recovery of aluminum from low-grade scrap. While details of the process are not divulged, the method entails special fluxing, refining and furnace operations, together with the use of a new smelting furnace designed by Dr. Anderson. An interesting point is the refining operation. Refining of melts of any kind of aluminum scrap gives higher grade metal than otherwise, it is stated. The quality of the metal produced by this process is claimed to be excellent, and many practical tests have conclusively demonstrated the value of the method in the production of casting alloys for use in foundry practice; No. 12 alloy, as made by the Anderson process, has excellent machining qualities and casts soundly with freedom from hard spots, cracks and draws. The cost of secondary aluminum smelting by this process is somewhat greater than the ordinary method, but the quality of metal produced is pointed to as better.

The annual meeting and dinner dance of the American Society of Safety Engineers, metropolitan chapter, engineering section, National Safety Council, will be held at the Cafe Boulevard, New York, Jan. 18. S. H. Libby, General Electric Co., Bloomfield, N. J., will be toastmaster. G. S. Wood, 29 West Thirty-ninth Street, New York, is secretary of the society.

**Old Metals, Per Pound, New York**

*The buying prices represent what large dealers are paying for miscellaneous lots from the smaller accumulators, and the selling prices are those charged consumers after the metal has been properly prepared for their uses.*

| | Dealers' Buying Prices | Dealers' Selling Prices |
|---|---|---|
| Copper, heavy crucible | 10.75c. | 12.50c. |
| Copper, heavy and wire | 10.50c. | 11.50c. |
| Copper, light and bottoms | 8.75c. | 10.25c. |
| Brass, heavy | 6.50c. | 8.00c. |
| Brass, light | 5.75c. | 7.25c. |
| Heavy machine composition | 8.25c. | 9.75c. |
| No. 1 yellow brass turnings | 8.00c. | 8.50c. |
| No. 1 red brass or composition turnings | 7.75c. | 8.75c. |
| Lead, heavy | 6.50c. | 7.00c. |
| Lead, tea | 4.75c. | 5.50c. |
| Zinc | 4.25c. | 4.75c. |
| Sheet aluminum | 15.00c. | 17.00c. |
| Cast aluminum | 15.00c. | 17.00c. |

# ALUMINUM ALLOYS

## Cincinnati Steel Treaters Hear Lecture on Casting Methods, Heat Treatment and Composition

CINCINNATI, Jan. 8.—Dr. Robert J. Anderson, president Robert J. Anderson, Inc., chemists, metallurgists and consulting engineers, 2416-38 Beekman Street, Cincinnati, and consulting metallurgical engineer to Aluminum Industries, Inc., Cincinnati, addressed the Cincinnati chapter of the American Society for Steel Treating at the Engineers' Club last night. His topic was "The Production, Heat Treatment and Uses of Aluminum Alloy Castings." The subject was discussed in a general way, more particularly as regards present practice and recent developments of importance.

The various kinds of aluminum alloys used in the production of castings were described and their general mechanical properties given. Methods for preparing aluminum alloys were gone into, as well as the raw materials used in alloying practice. The use of scrap and secondary metal in casting practice was taken up. A description was given of the various types of furnaces used in melting, and melting practice in general was discussed. The importance of cleanliness in melting was stressed.

The chief processes used for the production of aluminum-alloy castings were discussed: Sand founding, permanent-mold casting and die casting. The applications of castings made by these methods were taken up, and the limitations of each described. It was pointed out that the permanent mold process has risen to a position of great importance in the aluminum casting industry in the past few years.

The heat treatment of aluminum alloy castings is a recent development of great importance and has opened the pathway to wider uses of aluminum alloys, said the speaker.

## Produces Nickel of 99.90 Per Cent Purity

A new grade of electrolytic nickel is announced by the International Nickel Co., 67 Wall Street, New York, as being produced at its Port Colborne Works, Port Colborne, Ont. It is being made by the Stanley process, developed by R. C. Stanley, president of the company, but with certain modifications in the electrolytic operation.

The new product is claimed to have a purity of 99.90 per cent and as being the highest grade of nickel ever produced in quantity on a commercial basis, in that it will be carbon and sulphur free. It is produced in the standard 27 x 36-in. cathode, weighing approximately 150 lb., and will be cut into varying sizes of squares down to 1 in., as the trade requires. In this form it will be known as "Electro Squares."

The present capacity for the production of this special grade of electrolytic nickel is approximately 750,000 lb. per month. Nickel of this grade, free from carbon and sulphur, is particularly applicable to the production of high nickel content alloys, such as nickel-silver, copper-nickel, nickel-chromium and ferronickel.

## PERSONAL

Fred S. Doran has been appointed manager of the Cleveland plant of Joseph T. Ryerson & Son, Inc. This new warehouse plant of the Ryerson company was purchased from the Bourne-Fuller Co., Cleveland, on Jan. 3. Mr. Doran has been associated with Joseph T. Ryerson & Son for 21 years. Beginning in office work, he traveled the Wisconsin territory for five years and then covered the Chicago city territory for some time until he was made assistant to A. M. Mueller, general manager of sales, Chicago.

F. S. DORAN

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Neely Powers, formerly vice-president George H. Bowman Co., Cleveland, has become associated with the Universal Steel Co., 2966 East Fifty-fifth Street, Cleveland. He will be in charge of sales and also of the company Cleveland warehouse, maintaining stocks of sheets, strip steel and band iron.

—

M. B. Urquhard, for the last 20 years Northwestern manager for the Keystone Lubricating Co., Philadelphia, has resigned to assume the Western management of the Philadelphia Grease Mfg. Co., Philadelphia. His offices will be located at the company's warehouses in the Ideal Building, Denver, Colo., and at 144 South Fifth West Street, Salt Lake City, Utah.

—

Charles E. Pynchon, a director of the Pyrotung Metals Corporation and the Pyrotung Mfg. Co., Chicago, and general manager of the latter company, has disposed of his financial interests in the companies and resigned from his executive positions. He has not announced his future plans.

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Richard P. Tell, president and general manager of the National Brake & Electric Co., and the National Steel Foundries, Milwaukee, on Jan. 1 observed the twenty-fifth anniversary of his connection with the companies. Associates gave him a desk clock, the presentation being made by P. L. Crittenden, chief engineer.

—

M. J. Maloney, for more than 20 years traffic manager for the Central Iron & Coal Co., Holt, Ala., has been appointed general manager of the company to succeed the late J. L. Brierton. He also will succeed Mr. Brierton as southern manager for the Central Foundry Co., Hamilton, Ohio. Both companies are subsidiaries of the Universal Pipe & Radiator Co., 41 East Forty-second Street, New York.

—

Peter J. Connell, for 46 years a blooming mill roller at the Ohio Works of the Carnegie Steel Co., Youngstown, retired last week, and will be placed on the pension list. He rolled the first ingot that passed through the rolls at the blooming mills of the Ohio works, 32 years ago.

—

Samuel Porcher, having been promoted from general purchasing agent of the Pennsylvania Railroad, Philadelphia, to assistant vice-president in charge of purchases, stores and insurance, the position of general purchasing agent has been filled by C. D. Young, who was stores manager. C. E. Walsh, who was assistant purchasing agent, has been appointed purchasing agent, succeeding Montgomery Smith, who becomes assistant to the general purchasing agent.

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Charles E. Walsh, recently appointed purchasing agent of the Pennsylvania Railroad, was the guest of honor at a dinner at the Art Club, Philadelphia, Monday evening, Jan. 10, given by about 80 business men, including quite a number from the steel industry. Geographically those attending the dinner represented almost all sections of the country as far west as Denver.

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J. R. Thompson, who has been acting works manager Trafford works, Westinghouse Electric & Mfg. Co., has been appointed works manager. He has been with the Westinghouse company since 1897, serving successively as time clerk, paymaster and assistant purchasing agent before going to the Trafford works in 1904.

—

N. C. Reed has been appointed district sales manager Detroit office Wheeling Steel Corporation, Wheeling, W. Va., succeeding James A. Henry, resigned. Mr. Reed has been Boston district manager of sales for a number of years and has been associated with the Wheeling Steel Corporation since his graduation from Yale University in 1914, with the exception of the period during the World War. In 1917 he was commissioned a lieutenant and served overseas with the Twenty-sixth Division, having been made a captain in 1918. After the armistice he received a degree in metallurgy from the Sorbonne University in Paris before returning to the United States to resume his duties at the New York office of the Wheeling Steel Corporation. W. M. Hall, who has been Los Angeles district sales manager, has been named to succeed Mr. Reed in Boston. Luther L. Jaynes has been appointed district manager of sales, home office district, with office at Wheeling, W. Va. Mr. Jaynes, who succeeds Thomas W. Oberhauser, resigned, has been associated with the Wheeling Steel Corporation for many years and served in the Pittsburgh district sales office before that office was made part of the Wheeling district sales division.

N. C. REED

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Fred J. Cooper is in charge of a Pittsburgh district office recently opened in the Davis Theater Building by the Union Mining Co., Baltimore, manufacturer of refractories, with plants at Mt. Savage, Md. Before joining that company he was with the Newton Steel Co., and previously with the American Sheet & Tin Plate Co.

—

J. D. A. Morrow, vice-president in charge of sales Pittsburgh Coal Co. since April 1, 1926, has been elected president of the company, succeeding W. K. Field, resigned. Mr. Morrow has been an active figure in the coal industry for many years. During the existence of the United States Fuel Administration in 1918 and 1919 he served as director of distribution and at the same time was vice-president of the National Coal Association. After the war he became president of the Morrow-Callahan Coal Co. and later sales manager of the Joy Mfg. Co., manufacturer of coal mining machinery. J. B. Hornberger, vice-president and comptroller of the Pittsburgh company, has been elected a director and chairman of the executive committee, and

L. E. Young has been made vice-president in charge of operations. Mr. Morrow will discuss the bituminous coal situation at the regular monthly dinner and meeting of the Pittsburgh Association of Purchasing Agents to be held at the Chamber of Commerce in that city on Jan. 18.

—

H. P. Davis, vice-president Westinghouse Electric & Mfg. Co., East Pittsburgh, has been made chairman of the board of the National Broadcasting Co., operating radio broadcasting stations in New York and Washington.

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Edward N. Hurley, chairman Hurley Machine Co., Chicago, and W. G. Warden, chairman Pittsburgh Coal Co., Pittsburgh, have been made directors of the Studebaker Corporation of America.

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Alvin S. Rich, formerly associated with the Wagner Electric Corporation, St. Louis, is now connected with the New York branch of the Industrial Electric Motor & Tool Co. at 1 Howard Street.

—

Clyde H. Burgston, whose appointment as assistant superintendent of the Union Malleable Iron Co. of Deere & Co., Moline, Ill., was announced a few months ago, has been made superintendent of the company, effective Dec. 1. Prior to his appointment as assistant superintendent he had been engaged in metallurgical consultant work for Deere & Co. since 1911.

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William D. Evans, general counsel, and J. C. Watson, treasurer, have been elected directors of the Jones & Laughlin Steel Corporation, Pittsburgh.

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James Warren has resigned as manufacturing executive of the Lalance & Grosjean Mfg. Co., Woodhaven, N. Y., to become works manager of the Rome Mfg. Co., Rome, N. Y. Prior to his association with the Lalance & Grosjean organization he was works manager for the Superior Steel Corporation and was employed by other steel mills in the Pittsburgh district.

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John F. McConnell, formerly with the United Alloy Steel Corporation, Canton, Ohio, and with the Interstate Iron & Steel Co., Chicago, has been made vice-president in charge of operations for the Penn Seaboard Steel Corporation, Philadelphia.

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John A. Coe, president American Brass Co., New York, has been made a director of the Anaconda Copper Mining Co. to fill the vacancy caused by the death of Charles A. Brooker.

—

Alfred Cook, formerly vice-president and general manager of the Tioga Steel & Iron Co. and the Philadelphia Roll & Machine Co., both of Philadelphia, has been appointed Eastern representative of the Pittsburgh Rolls Corporation, with offices in the Widener Building, Philadelphia.

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Fred Hughes Moyer has been elected vice-president of the Mackintosh-Hemphill Co., Pittsburgh, and will give particular attention to the sales and engineering departments. Mr. Moyer has had wide experience in general steel works practice and has been intimately associated with the industry since his graduation from Cornell University in 1899. He has contributed to the engineering development of some of the most notable steel plants in this country, including the Clairton plant of the Carnegie Steel Co., the Gary plant of the Illinois Steel Co., and the Cambria Steel Co., Johnstown, Pa., in the capacity of chief engineer as well as in operating capacities with Pittsburgh Crucible Steel Co., Midland, Pa., and United Alloy Steel Corporation, Canton, Ohio.

—

Thomas M. Davidson, formerly vice-president of the American System of Reinforcing, Los Angeles, has been added to the staff of Badt-Falk & Co., 1423 South Alameda Street, Los Angeles.

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H. R. Miller, for a number of years associated with Cavert, Miller & Lipscomb, Nashville, Tenn., manufacturers' representatives, has retired from the firm, which will hereafter be known as Cavert & Lipscomb. Julian Scruggs, for a number of years representative in the Southeastern territory for Cavert, Miller & Lipscomb, and J. H. Hitt, associated for the last 25 years with the Gray & Dudley Co., Nashville, have been made partners in the firm, effective Jan. 1.

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Charles E. Skinner, assistant director of engineering, Westinghouse Electric & Mfg. Co., East Pittsburgh, was reelected chairman for 1927 at the annual meeting of the American Engineering Standards Committee, held in New York. Mr. Skinner is the representative of the American Institute of Electrical Engineers. C. R. Rufus, construction engineer of the Connecticut Co., New Haven, and representing the American Electric Railway Association, continues as vice-chairman of the A. E. S. C.

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W. A. Wheeler has been advanced to the presidency of the Paige-Detroit Motor Car Co. to succeed H. M. Jewett, who has been named chairman of the board, a newly created position in the company. Henry Krohn, general manager of sales, and Thomas Bradley, director of purchases, have been made vice-presidents and directors.

—

J. Barton Harry has resigned as president of the Edwin Burhorn Co., New York, to organize the J. Barton Harry Co., 635 North Sixty-fourth Street, Philadelphia, for the manufacture of water cooling towers and spray systems. Mr. Harry's company will also act as representative for a foundry manufacturing iron and brass castings and for a fabricator of structural steel and plates.

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Theodore Boveri, of the American Brown Boveri Electric Corporation, 165 Broadway, New York, a son of the late Walter Boveri, a founder of Brown, Boveri & Co., Ltd., has been elected to a vice-presidency. He was for years in charge of design and manufacture of the company's Baden, Switzerland, plant, and will have charge of the engineering work of the American company.

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R. C. Martens, formerly at the head of Martens & Co., Inc., New York, previous to and during the war an exporter and importer of iron and steel and other products in this country and Europe, particularly Russia, has organized California Opportunities, Inc., 544 Market Street, San Francisco. The enterprise is designed to assist prospective residents of California in getting in touch with the agricultural, industrial and commercial opportunities, and is, broadly speaking, a real estate clearing house. Mr. Martens resigned a short time ago, after having served for two years, as sales manager for the National Automobile Club.

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Asa W. Griffith, assistant general superintendent in the Youngstown district for the Carnegie Steel Co., has resigned, effective Jan. 1, on account of failing health. He had held this position since March 24, 1925, serving as assistant to L. N. McDonald, district superintendent at Youngstown. Mr. Griffith became associated with the Carnegie company on June 1, 1902, and came to the Youngstown district in 1907 from the McCutcheon mills, where he had been superintendent, in order to take charge of the designing and installation of the proposed McDonald bar mills. The project was temporarily delayed, and he was made assistant super-

intendent of the Upper and Lower Works of the Carnegie company. In 1916 he succeeded I. Lamont Hughes as superintendent of the bar mills of the company at Youngstown, and continued in that capacity until his appointment as assistant general superintendent.

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Fred W. Quigley, since 1922 superintendent of the open-hearth and Bessemer departments of the Carnegie Steel Co. at Youngstown, has been appointed assistant general superintendent in the Youngstown district, succeeding Asa W. Griffith. Following graduation from the Case School of Applied Science in 1908 Mr. Quigley immediately became associated with the Carnegie company at Youngstown and was assistant superintendent of the blast furnace department prior to 1922.

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F. G. Jolliffe has resigned as secretary of the J. E. Moss Iron Works, Wheeling, W. Va., to engage in the accounting business. His successor is F. L. Barth.

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F. F. Fitzpatrick, president of the American Locomotive Co., and Dallas B. Pratt have been elected directors of the American Car & Foundry Co., New York.

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F. J. Arnold has been appointed purchasing agent for the American Radiator Co., Buffalo, and N. P. Dessert has been made assistant purchasing agent. Both have been associated with the company for a number of years.

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Dr. M. L. Hartman, until recently director of research for the Carborundum Co., Niagara Falls, N. Y., has been appointed technical director of the Celite Products Co., with headquarters at the company's research laboratory at Lompoc, Cal. He is a graduate of the University of Arizona and received his doctor's degree from Harvard University. Previous to his association with the Carborundum Co., he was head of the department of chemistry at the South Dakota State School of Mines, Rapid City, S. D.

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J. M. Thomas, Old Colony Building, Chicago, has been appointed representative in that city for the William J. Sweet Foundry Co., Inc., Irvington, N. J.

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E. L. Bishop, formerly New York district manager for Midwest Air Filters, Inc., Bradford, Pa., has been made general sales manager of the company.

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E. E. Goodwillie, recently made assistant general of sales of the Bethlehem Steel Corporation at Bethlehem, Pa., is to be in the structural and plate department under G. S. Blakeley, according to the official announcement now available. Mr. Goodwillie was formerly Pacific Coast sales agent.

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A. H. D'Arcambal, sales manager small tools division, Pratt & Whitney Co., Hartford, Conn., will be the guest of the New Britain section of the American Society of Mechanical Engineers at its monthly meeting, Jan. 26.

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Lou A. Raasch has been appointed director of sales for Rocky Mountain Steel Products, Inc., Los Angeles. For eight years he was branch manager and sales manager for Walden-Worcester, Inc., Worcester, Mass.

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Dr. F. C. Langenberg, director of laboratories of the Watertown Arsenal, Watertown, Mass., has become associated with the Climax Molybdenum Co., 61 Broadway, New York, and will head the company's research department.

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D. F. Edwards, for twelve years associated with the automotive industry, and subsequently vice-president and later president of the Wickwire Spencer Steel Co., Buffalo, has been made president of the Saco Lowell Shops, Boston, maker of textile machinery. He succeeds Robert F. Herrick, who remains a director of the company.

S. M. Blackburn, vice-president and general manager Morris Foundry Co., Cincinnati, has resigned, effective Jan. 1.

—

Arthur C. Pletz has been appointed sales manager of the miscellaneous machinery department of the Niles Tool Works Co., division of Niles-Bement-Pond Co., New York. Since graduating from the Ohio Mechanics Institute, Cincinnati, Mr. Pletz has been engaged in the machine tool business as draftsman, sales engineer, tool designer, chief draftsman and superintendent for various companies. In 1914 he became manager of the Aurora Tool Works Co. and for the past 12 years has been secretary and general manager of the Morris Machine Tool Co., Cincinnati. He will be located in the future at the Niles offices in Hamilton, Ohio.

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L. A. Quinn has been appointed acting manager of the Birmingham office of the Niles Tool Works Co., division of Niles-Bement-Pond Co., New York, succeeding the late N. C. Walpole.

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J. O. Dearth has been appointed district sales manager in Cincinnati for the Central Alloy Steel Corporation, Massillon, Ohio, with offices at 1320 Union Trust Building.

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J. B. Marks has been elected executive vice-president of the Colorado Fuel & Iron Co., Denver, Colo., and will have supervision over all departments of the company's activities.

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Theodore Beran, New York district manager; H. L. Monroe, Central district manager, Chicago, and J. A. Cranston, Pacific Coast district manager, San Francisco, have been elected commercial vice-presidents of the General Electric Co., Schenectady, N. Y. All have been associated with the company since its founding or early days, and have been managers of their respective offices for considerable times. E. W. Allen, since 1924 manager of engineering for the company, has been elected vice-president in charge of engineering with offices in Schenectady. G. E. Emmons, vice-president in charge of manufacturing from 1916 until his retirement in 1924, was reelected to his former position on account of temporary absence due to illness of F. C. Pratt.

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Lester B. Paterson, formerly associated with the American Locomotive Co., has been made assistant production manager of the Combustion Engineering Corporation, 200 Madison Avenue, New York.

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W. F. Ellwood, chemical engineer, Keystone Coal & Coke Co., Greensburg, Pa., will address the regular monthly meeting of the Pittsburgh Foundrymen's Association at the Fort Pitt Hotel, Jan. 17, on the subject, "Coke: What It Is and How It Is Made."

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Frank L. Estep, consulting engineer with Perin & Marshall, 40 West Fortieth Street, New York, sailed for Europe on Jan. 8 for a short business trip.

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John H. Bradley, president Pratt & Letchworth Co., Buffalo, has resigned.

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L. B. Lindemuth, of Carney & Lindemuth, 40 Wall Street, New York, consultnig engineers and metallurgists, has returned to his office after an absence of nearly a year. During that time he has been employed in a consulting capacity at the steel plant of the Broken Hill Proprietary Co., Ltd., Newcastle, New South Wales. Mr. Lindemuth spent several weeks in China and Japan before his return to this country.

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Lawrence L. Arnold, in charge of blast furnace and steel plant operations at the Buffalo works of the Wickwire-Spencer Steel Corporation since that company's formation in 1919, has retired. He had held the same position with the Wickwire Steel Co. for some 15 years before the merger.

# Machinery Markets and News of the Works

## MACHINERY TRADE BETTER

### General Electric Co. Places Large Orders for Electric Refrigeration Plant

### Delaware, Lackawanna & Western Inquires for 20 Tools—Automobile Industry Still Slow in Buying for 1927 Program

A LITTLE more than a week of the new year has already brought definite signs of more favorable prospects for the machine tool trade. Manufacturers whose plans were held in abeyance at the end of last year are now proceeding with less hesitancy in placing orders.

The General Electric Co. has provided the largest business of the week, having bought upward of $200,000 worth of machine tools of various types for its electric refrigeration department at Schenectady, N. Y.

The largest inquiry is from the Delaware, Lackawanna & Western Railroad, which has on its list about 20 items, several of them tools of heavy type.

Automobile manufacturers are still somewhat slow in placing orders for 1927 requirements, but such buying will not be long delayed if sales results at the New York and Chicago automobile shows are encouraging.

Railroad orders have come chiefly from the Norfolk & Western, Baltimore & Ohio and New York Central.

New England industries are showing more signs of plans to rehabilitate plant equipment. A Massachusetts company may buy 25 lathes and a Rhode Island company may revamp its entire machine shop equipment. Other New England plants have tentative plans that involve purchase of new tools.

The Jones & Laughlin Steel Corporation, Pittsburgh, has placed orders for 11 overhead electric traveling cranes for its new seamless pipe mill.

## New York

NEW YORK, Jan. 11.

THE new year has opened with a fair amount of machine tool business, chiefly from the General Electric Co., whose orders amount to upward of $200,000 for various types of machines to be used in the electric refrigeration department at Schenectady, N. Y., which is housed in the building formerly occupied by the switchboard department, now located in Philadelphia. The largest railroad list issued in this district in some time comes from the Delaware, Lackawanna & Western, which is inquiring for about 20 machines, including a car-wheel lathe, a locomotive journal turning lathe, a large rod milling machine, two radial drills and other smaller types of tools.

The past week's orders include the following: Missouri Pacific Railroad, a 5-ft. radial drill; Hudson Coal Co., Scranton, Pa., a 60-in. x 48-in. x 18-ft. planer; United States Engineers' Repair Station, Marietta, Ohio, a 15-in. crank slotter; a Cleveland gear manufacturer, an automatic gear cutting machine; New York Central Railroad, a cold saw and a floor grinder; a St. Petersburg, Fla., shop, a carwheel boring machine; a Baltimore company, a 4-spindle nut tapping machine; Norfolk & Western Railroad, a 16-in. lathe and a vertical shaper; a building materials manufacturer in Chicago, a 16-in. lathe; William Sellers & Co., Philadelphia, a 16-in. lathe; Mount Wilson Observatory, Pasadena, Cal., a 10-in. tool makers' lathe; a mechanical appliance company in Los Angeles, Cal., two bench milling machines; another Los Angeles company, a turret lathe; a Fresno, Cal., company, a power milling machine; New York Rapid Transit Co., a 13-in. lathe.

Revised plans are being prepared by F. A. D. Andrea, Inc., 1581 Jerome Avenue, New York, for its four-story plant, 160 x 225 ft., at 138th Street and Mott Avenue, estimated to cost $425,000 with equipment. It will be erected in the name of the Andrea Holding Co., an affiliated organization. Bids are expected to be asked in about 60 to 90 days. The Ballinger Co., 100 East Forty-second Street, is architect and engineer.

The White Motor Co., 842 East Seventy-ninth Street, Cleveland, will soon take bids for a one-story factory branch, service and parts building on Cypress Avenue, near 133rd Street, New York, 175 x 214 ft., to cost in excess of $100,000 with equipment.

The Shelton Mfg. Co., Inc., 450 East Fourth Street, New York, manufacturer of corrugated paper products, has leased two floors in a factory at Long Island City, for a new plant.

Eugene De Rosa, Inc., 15 West Forty-fourth Street, New York, architect, has filed plans for a seven-story automobile service, repair and garage building, 100 x 150 ft., to cost about $350,000 with equipment.

The Long Island Lighting Co., 50 Church Street, New York, is arranging for an increase in capital by an amount of $10,000,000, a portion of the proceeds to be used for extensions and improvements.

Howatt & Lee, Inc., 107 Steinway Avenue, Long Island City, local representative for the Studebaker automobile, has leased for ten years a new building, 50 x 175 ft., to be erected at Jackson and Second Avenues, with machine, repair and service departments, etc., to cost in excess of $100,000.

The Rubel Coal & Ice Co., 197 Glenmore Avenue, Brooklyn, is continuing an expansion program in its ice division and is having plans completed for a one-story plant, 100 x 100 ft., at 2223-33 Utica Avenue, to cost about $85,000. Plans have been filed also for a one-story plant at 519-21 Remsen Avenue, 40 x 100 ft., to cost approximately $25,000. Edward M. Adelsohn, 350 Stone Avenue, Brooklyn, is architect for both structures.

The Strickland Foundry & Machine Works, Inc., 556 West Thirty-fourth Street, New York, has leased space in the building at 520-26 West Thirty-sixth Street, totaling about 10,000 sq. ft., for a new plant. It is reported that the present business will be removed to the new location and considerably expanded. Arthur H. Strickland is president.

Edward P. Doyle, 11 John Street, New York, architect, has filed plans for a six-story automobile service, repair and garage building, 100 x 200 ft., on West Sixty-first Street, to cost about $130,000 with equipment.

The Empire State Ice Co., Grant Avenue and 161st Street, New York, has plans for a new ice-manufacturing plant at Bailey Avenue and 234th Street, to cost in excess of $300,000 with equipment.

The Brooklyn Union Gas Co., 176 Remsen Street, Brooklyn, has filed plans for a two-story storage house and mechanical shop, 65 x 225 ft., at 524-48 Withers Street, to cost about $275,000 with equipment. The company will also build a three-story generating station, 105 x 190 ft., at 406-12 Gardiner Avenue, to cost $600,000.

The Albany Port Commission, Albany, N. Y., has plans under consideration for a new grain elevator on one of the city waterways, with capacity of 3,000,000 bu., reported to cost more than $1,500,000 with screening, conveying, loading and other machinery. E. P. Goodrich is port engineer.

Maurice Deutsch, 35 Maiden Lane, New York, architect and engineer, has plans under way for a six-story automobile service, repair and garage building, 100 x 260 ft., on West Sixty-first Street, to cost in excess of $500,000 with equipment.

The Ford Motor Co., Detroit, has awarded a general contract to Lynch & Larkin, 127 Downing Street, Yonkers, N. Y., for extensions and improvements in its three-story factory branch, service and parts building, 100 x 145 ft., at South Broadway and Herriott Streets, Yonkers, to cost more than $70,000. Albert Kahn, Marquette Building, Detroit, is architect.

The New Jersey Power & Light Co., Dover, N. J., is disposing of a bond issue of $6,000,000, a portion of the proceeds to be used for extensions and improvements in plants and system. The company is operated by the General Gas & Electric Corporation, 50 Pine Street, New York, and will be closely identified with the construction of a new steam-operated electric generating station by the parent company at Holland, N. J., on which work will soon begin. The plant will have an initial capacity of 30,000 kw. and ultimate output of 200,000 kw., and is scheduled for completion in 1928. W. S. Barstow is president.

The Western Electric Co., 195 Broadway, New York, has filed plans for another unit of its new plant at Kearny, N. J., to be five stories, estimated to cost $650,000 with equipment.

The Department of Public Affairs, Newark, N. J., Thomas L. Raymond, director, has plans for a one-story automobile service, repair and garage building, 130 x 190 ft., for municipal trucks and cars, estimated to cost $120,000 with equipment.

The Lyon Metallic Mfg. Co., Aurora, Ill., manufacturer of steel factory equipment, etc., has leased for a term of years the larger part of the plant of the Ohio Match Sales Co., Jersey City, N. J., for a new Eastern factory branch and distributing plant.

The United Sign Co., Inc., 545 East Fifteenth Street, New York, has been organized with a capital stock of $100,000 to manufacture enameled iron signs. It will be in the market for sheet iron, angle iron and enameled work. Offices are at 200 East Fourteenth Street.

The Newark Clock Co., Newark, has been organized with a capital of 2500 shares of no par value stock to manufacture an eight-day plate clock. Communications should be addressed to Frederick Spitzhoff, Newark.

The Interstate Products Corporation, 23-29 Commercial Street, Newark, has been organized to manufacture technical supplies in precious metals, including contact points in platinum and its alloys, silver and special alloys and rivets in all metals.

The Packard Auto Heater Corporation, New York, has been incorporated with a capital stock of $500,000 to manufacture heaters of water and steam operation for use in automobiles, buses and small passenger coaches. The company will be in the market for gray iron castings and boiler tubes, and will open offices in this city on March 1. William H. Packard, 35 St. Nicholas Terrace, New York, is president of the corporation.

## New England

BOSTON, Jan. 10.

THIS year is starting out with more encouragement to makers and sellers of new machine tools than it did in 1926. It is felt that numerous New England industries have come to the realization that new equipment must be installed to meet competition from other sections of the country, and are planning for the installation of the most modern equipment. One middle Massachusetts plant is negotiating for 25 lathes; a Rhode Island plant has quite an extensive revamping program about to mature, and a half-dozen other plants in various sections give indication of closing on an aggregate of $75,000 worth of new equipment. New England railroads are making up their budgets, and one has a rather extensive list of tools under consideration. Many leading machinery builders contemplate buying tools, as do also numerous small shops.

Sales of new tools the past week or 10 days include a 36-in. planer to a New Hampshire shop; a thread milling machine to a local company; several lathes ranging in cost from about $1,000 to more than $5,000 each; grinding equipment, jig borers and miscellaneous tools. Most of the New England machine tool builders are busy, and deliveries on certain types of machines range from one to several months. One company is reported to have taken a substantial foreign order the last few days of 1926. Buying of small tools and machine parts has begun earlier than anticipated, but is by no means active.

The used machine tool market is quiet. The most important sales reported the past week include a 14-in. x 6-ft. lathe to a Haverhill, Mass., shop; a 16-in. x 8-ft. lathe to Berlin, N. H.; a Norton grinder to a Rhode Island company, and a Brown & Sharpe grinder to a Massachusetts firm. Used-tool houses are receiving few inquiries except for inventory purposes.

The Collins Co., Collinsville, Conn., will close its Lewiston, Pa., plant and remove the machinery to Collinsville.

The Somerville Machine & Foundry Co., 14 Kent Street, Somerville, Mass., has postponed until spring the erection of its proposed plant unit.

Coal-handling machinery is required by the Andrews Square Terminal Co., Inc., for its new Dorchester Avenue, Boston, power plant. A. Kamp, 53 State Street, heads the company. Herbert S. Cleverdon, 184 Boylston Street, is the engineer.

F. J. Donahue, 35 Garbes Street, Providence, R. I., has completed plans for a two-story, 40 x 95-ft. jewelry manufacturing plant at 268 Pine Street.

A small amount of conveying equipment will be required for a one-story warehouse and office building on Dorchester Avenue, Boston, contemplated by the Truscon Steel Co., 260 Tremont Street. L. A. Estes represents the company in Boston.

The Franklin Moore Co., Winsted, Conn., chain hoists, blocks, trolley and similar products, has been purchased by the Union Mfg. Co., New Britain, Conn.

Henry & Allen, Auburn, N. Y., have sold the business and plant of the Malleable Iron Works, Myrtle and Grove Streets, New Britain, Conn., to the Eastern Malleable Iron Works. William Waskey will continue as manager of the New Britain plant.

A preliminary certificate of dissolution has been filed by the American Tube & Stamping Co., Bridgeport, Conn. Claims may be addressed to the president, Charles G. Sanford, 886 Main Street, Bridgeport.

The New Departure Mfg. Co., Bristol, Conn., manufacturer of ball bearings, a subsidiary of the General Motors Corporation, has adopted a full-time production schedule at its three main plants at Bristol, Elmwood and Meriden, Conn., effective Jan. 3, replacing a 40-hr. week which has prevailed for about 60 days. Close to 6000 employees are affected by the change.

The American-Canadian Properties Corporation, 170 Broadway, New York, has removed its Bridgeport, Conn., office to 62 Cherry Street.

The Connecticut Light & Power Co., Waterbury, Conn., has preliminary plans for a new steam-operated electric generating plant on site of its present station at Leesville, Conn., to increase the output more than five times over the existing capacity, estimated to cost $1,000,000 with equipment. Franklin M. Dernaid is vice-president.

The Menasha Wooden Ware Co., Menasha, Wis., has concluded negotiations for the purchase of the plant and business of the Keene Wooden Ware Co., Keene, N. H., for $200,000, and will continue operations as a branch plant.

The Paige-Detroit Co. of New England, Inc., 532 Commonwealth Avenue, Boston, has leased a new building to be constructed on Commonwealth Avenue to cost in excess of $100,000, for a new factory branch, service and repair building. William Dykeman, 15 Exchange Street, is architect.

The City Council, Castleton, Vt., is planning the installation of a pumping plant in connection with a proposed municipal water system. Barker & Wheeler, 36 State Street, Albany, N. Y., are engineers.

The Sterling Clock Co., 30 Irving Place, New York, is planning the early establishment of a new plant at Meriden, Conn., for the manufacture of an electric clock for automobiles. It is said that the present New York plant will be removed to the new location. Louis J. Sterns is managing director.

The S. A. Woods Machine Co., 27 Damrell Street, Boston, manufacturer of wood-working machinery, has concluded arrangements for the purchase of the plant and business of W. B. Mershon & Co., Saginaw, Mich., manufacturers of kindred equipment, including sawing machines and parts, and will consolidate with its organization. It is understood that the Saginaw plant will be continued as a branch factory.

The White Motor Co., 842 East Seventy-ninth Street, Cleveland, is planning to ask bids in February for a new factory branch, service and repair building at Hartford, Conn., to cost approximately $250,000 with equipment.

The Blackstone Valley Gas & Electric Co., Providence, R. I., is arranging for a stock issue of $1,229,350, the majority of the proceeds to be used for extensions and improvements in power plants and system.

## The Crane Market

BUT little inquiry for either overhead or locomotive cranes has appeared since the first of the year, but there is a fair volume of pending business, some of which will probably be closed during the current month. Among locomotive crane inquiries is a request for prices on a 35 to 50-ton locomotive crane by Stone & Webster, Boston, for use at Conowingo, Md.

In the Chicago district the Economy Pumping Machinery Co., 112 Curtis Street, Chicago, is in the market for a 5-ton, 27-ft. span, two-motor overhead crane.

Among recent purchases are:

New England Power & Construction Co., Worcester, Mass., a 25-ton electric traveling crane and a 70-ton trolley from an unnamed builder.

Brooklyn Eastern District Terminal Co., Brooklyn, N. Y., a 12-ton, gasoline-driven, crawl-tread locomotive crane with magnet and generator, from the Link-Belt Co.

City of New York, a 25-ton standard locomotive crane, awarded to the Browning Crane Co.

B. W. Gahagan, Walnut, N. C., a 35-ton used locomotive crane from a local dealer.

R. Voras & Co., Brooklyn, N. Y., a 5-ton, motor-driven overhead crane from H. D. Conkey & Co.

Skayef Ball Bearing Co., Hartford, Conn., a 1-ton, motor-driven, overhead crane from H. D. Conkey & Co.

Carl Hassenstein Co., Sioux Falls, S. D., two 1-ton hand power cranes from H. D. Conkey & Co.

Ford Motor Co., Detroit, a 5-ton, motor-driven, overhead crane from H. D. Conkey & Co.

American Malleable Co., Detroit, a 3-ton, hand power, jib crane from H. D. Conkey & Co.

Pennsylvania Railroad Co., a 5-ton, motor-driven, overhead crane for Pittsburgh, from H. D. Conkey & Co.

Pittsburgh & Lake Erie Railroad, two 7½-ton, 48-ft. span overhead cranes, for shops at McKees Rocks, Pa., from the Shaw Electric Crane Co.

Allegheny Steel Co., Brackenridge, Pa., a 15-ton, 70-ft. span overhead crane from the Shaw Electric Crane Co.

Carnegie Steel Co., Youngstown, three 160-ton ladle cranes from the Alliance Machine Co.

American Steel & Wire Co., Pittsburgh, one 15-ton, 57-ft. span crane for Donora, Pa., from the Alliance Machine Co.

Aluminum Co. of America, Pittsburgh, one 30-ton, 4-motor gantry crane for a power plant at High Rock, N. C., from the Niles-Bement-Pond Co.

Jones & Laughlin Steel Corporation, Pittsburgh, the following cranes for a seamless tube mill at Woodlawn, Pa.: Two 20-ton, 5-motor; two 15-ton and two 10-ton, 4-motor, all 121-ft. span; one 10-ton and one 15-ton, 3-motor, 71-ft. span; two 10-ton, 4-motor, 96-ft. span and one 10-ton, 3-motor, 31-ft. span cranes, from the Cleveland Crane & Engineering Co.

Belle City Malleable Co., Racine, Wis., a 2-ton, 2-motor electric hoist with monorail system, from O. J. Abell & Co., Chicago.

## South Atlantic States

BALTIMORE, Jan. 10.

PLANS are under way for the new works of the Edward Katzinger Co., 1949 North Cicero Avenue, Chicago, manufacturer of tinware specialties, at Highlandtown, Baltimore, where more than two acres recently has been acquired. It is said that bids will be asked on a general contract in about three to four months. The plant will cost more than $600,000 with equipment.

The Kelly-Springfield Tire Co., Kelly-Springfield Boulevard, Cumberland, Md., has plans under way for a two- and three-story addition, to cost about $225,000 with equipment. It is expected to ask bids on a general contract early in the spring. Mark Rowe is company engineer.

The Wortendyke Mfg. Co., foot of Thirteenth Street, Richmond, Va., manufacturer of paper products, has concluded negotiations for the purchase of the plant and business of the Peters Co., 33 Thirty-fifth Street, Brooklyn, manufacturer of gummed paper products, etc. The new owner will discontinue the operation of the Brooklyn factory, removing the machinery to the Richmond works where it will concentrate production. It is purposed to arrange for the expansion during the present month. Bruce Livy is vice-president of the Wortendyke company.

The South Penn Oil Co., Rosslyn, Va., is reported to be planning the early rebuilding of the portion of its local plant destroyed by fire Jan. 3, with loss estimated in excess of $350,000 with equipment.

The South Carolina Power Co., Charleston, S. C., has been organized with a capital of $20,000,000 to take over and consolidate the Charleston Consolidated Railway, Gas & Electric Co., Charleston Consolidated Railway & Lighting Co., and the Charleston Edison Light & Power Co. Plans are under way for extensions and improvements.

The Harford Talc Co., Inc., 1801 Chelsea Road, Baltimore, has been making inquiries for a cableway of about 3000 ft. of galvanized guy cable, with boiler and accessory equipment.

The Carolina Tractor & Equipment, Greensboro, N. C., W. C. Heitman, secretary and treasurer, is desirous of getting in touch with manufacturers of road machinery and other contractors' equipment.

The Bethlehem Shipbuilding Corporation, South and Water Streets, Baltimore, is said to be planning an immediate call for bids on a general contract for its proposed new shipyard unit on the Key Highway, comprising one and two-story shops, to cost approximately $1,000,000 with equipment.

The Bald Knob Furniture Co., Rocky Mount, Va., has plans under advisement for a new factory unit with power plant, estimated to cost in excess of $175,000 with machinery. The company has recently increased its capital from $1,500,000 to $3,000,000.

The City Council, Raleigh, N. C., is said to be planning an appropriation of $20,000 for the installation of refrigerating machinery in the city market.

The Eastern Shore Gas & Electric Co., Salisbury, Md., is completing plans for the construction of its proposed steam-operated electric generating plant in the vicinity of Vienna, Md., estimated to cost in excess of $1,000,000 with transmission lines, including a new high-tension line from Cambridge to Salisbury. It is purposed to break ground early in March. The company is under the direction of the General Engineering & Management Corporation, 141 Broadway, New York.

Barber & Ross, Inc., Eleventh and G Streets, N. W., Washington, hardware and building materials, operating a steel fabricating plant and general millwork factory, is disposing of a bond issue of $1,000,000, a portion of the proceeds to be used for general expansion. Samuel Ross is chairman of the board.

B. T. Earle, 248 Pine Street, Spartanburg, S. C., has plans for the construction of a one-story foundry, 25 x 100 ft., to cost more than $20,000 with equipment.

The City Council, Lakeland, Fla., is considering plans for the installation of a municipal electric light and power house.

The Common Council, Victoria, Va., is said to be planning the installation of pumping equipment in connection with a proposed municipal waterworks and sewage system. The J. B. McCrary Engineering Corporation, Atlanta, Ga., is consulting engineer.

The Broad River Power Co., Columbia, S. C., is arranging for a bond issue of $773,000, a portion of the proceeds to be used for extensions and improvements. The company has arranged for the acquisition of the Blue Ridge Power Co. and will consolidate with its organization. Two hydroelectric generating plants on the Green River, in North Carolina, heretofore operated by the Blue Ridge company will be continued in service. Extensions will be made in transmission lines.

W. H. Bone, Jr., Douglas, Ga., is planning the purchase of wood-working and wood-turning machinery for the manufacture of wood handles.

The Department of Public Works, Atlanta, Ga., W. Z. Smith, city manager, is said to be arranging a fund of about $175,000 for extensions and improvements in the municipal waterworks, including the installation of mechanical stokers, coal and ash-handling equipment in power plants. J. N. Eley, Atlanta Trust Building, is consulting engineer.

The Hackley-Morrison Co., Inc., 1708 Lewis Street, Richmond, Va., machinery dealer, has been making inquiries for a 1-ton overhead crane to handle a 3½-yd. bucket; an air compressor, 10 x 12 x 12 in.; two boilers, 30 to 40-hp. capacity, 125-lb. working pressure, one to be of Scotch type.

The Common Council, Kernersville, N. C., is considering the installation of pumping equipment in connection with proposed extensions in the municipal waterworks. A bond issue of $100,000 is being arranged.

## Philadelphia

PHILADELPHIA, Jan. 10.

THE Freihofer Baking Co., Twentieth Street and Indiana Avenue, Philadelphia, is having plans drawn for a three-story automobile service, repair and garage building, 50 x 300 ft., for company cars and trucks, to cost $200,000 with equipment. C. B. Comstock, 110 West Fortieth Street, New York, is architect.

The Stanley Plumbing & Supply Co., Tenth and Spring Garden Streets, Philadelphia, has leased the three-story building at Twelfth and Callowhill Streets, for a new works.

The Board of Trustees, University of Pennsylvania, Philadelphia, has awarded a general contract to William H. Gravell, Fifteenth and Locust Streets, for a one-story machine shop to cost about $25,000 with equipment.

The Philadelphia Motor Service Co., 508 North Nineteenth Street, Philadelphia, has awarded a general contract to the George Kessler Construction Co., 1733 North Marvine Street, for its four-story and basement plant, 115 x 185 ft., to cost approximately $300,000 with equipment. Andrew J. Sauer & Co., 1505 Race Street, are architects.

The Philadelphia Electric Co., Tenth and Chestnut Streets, Philadelphia, has plans for a two-story power substation, 85 x 94 ft., at Twenty-fifth Street and Washington Avenue, to cost close to $500,000 with equipment. John T. Windrim, Commonwealth Building, is architect.

The Teefy-Seitz Motor Co., Beach and Fairmount Avenues, Philadelphia, local representative for the Auburn automobile, has leased a four-story building to be erected at 1419-21 Spring Garden Street, to cost in excess of $150,000, for a new service, repair and headquarters building. The company has taken over property on an adjoining site and will occupy pending the completion of the new building.

The Crescent Storage Battery Co., Crescentville, Philadelphia, care of the William Steele & Sons Co., 219 North Broad Street, Philadelphia, engineer and contractor, will begin the erection of a new one-story plant, 60 x 125 ft., to cost close to $50,000 with equipment.

The Duncan Mackenzie's Sons Co., Hamilton and Clark Streets, Trenton, manufacturer of grate bars, etc., and operating a general foundry and machine shop, has plans for a new two-story foundry, 60 x 190 ft., in the Fernwood section, to cost in excess of $100,000 with equipment. Duncan Mackenzie is head.

The F. Wesel Mfg. Co., 72 Cranberry Street, Brooklyn, manufacturer of electrotyping machinery, printers' equipment, etc., has awarded a general contract to the D. R. Richardson Construction Co., Connell Building, Scranton, Pa., for its one-story plant, 200 x 500 ft., at Scranton, to cost close to $240,000 with equipment. Lockwood, Greene & Co., 100 East Forty-second Street, New York, are architects and engineers.

The Stevenson Cold Storage Door Co., 1500 West Fourth Street, Chester, Pa., has awarded a general contract to the Robert E. Lamb Co., 841 North Nineteenth Street, Philadelphia, for a one-story addition, 80 x 132 ft., to cost close to $50,000. The Ballinger Co., Twelfth and Chestnut Streets, Philadelphia, is architect and engineer.

The Philadelphia & Reading Railway, Reading Terminal, Philadelphia, has abandoned operations at its former car repair shops at Schuylkill Haven, Pa., and will increase operations at the car shops at St. Clair, Pa., and other points in this section, to provide for work heretofore handled at the Schuylkill Haven plant. Additions will be made in the working force at St. Clair.

The William F. Remppis Co., Lemon Street, Reading, Pa., operating an ornamental iron works, is considering the early rebuilding of the portion of the plant destroyed by fire Jan. 4, with loss estimated at $75,000 including equipment. One shop building sustained the bulk of the damage.

The Pottstown Cold Storage & Warehouse Co., 501 High Street, Pottstown, Pa., will soon begin the erection of a two-story ice-manufacturing and cold storage plant, 150 x 150 ft., to cost $85,000 with equipment. H. P. Friend, Curren Arcade, Norristown, Pa., is engineer. S. H. Porter is one of the heads of the company, in charge.

The Board of Education, Vineland, N. J., contemplates the installation of manual training equipment in a two-story and basement high school to cost $575,000, for which bids are being asked on a general contract. Guilbert & Betelle, Chamber of Commerce Building, Newark, N. J., are architects.

The Pusey & Jones shipyard at Wilmington, Del., has been sold to the Oil Transport Corporation, Baltimore, and if the sale is confirmed by United States District Court the business will be continued as heretofore. The shipyard has been in the hands of a receiver for some time. Efforts have been made by Theodore Fridenberg of the Manhattan Machinery Exchange, New York, to obtain possession of the plant.

The Elliott-Fisher Co., Harrisburg, Pa., manufacturer of calculating machines and parts, has concluded negotiations for the purchase of the plant and business of the Sundstrand Adding Machine Co., Rockford, Ill., manufacturer of kindred equipment. It is understood that the purchasing company will continue the Rockford plant in service. Products of both organizations will be marketed by the General Office Equipment Corporation, a subsidiary of the Elliott-Fisher Co.

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## Detroit

DETROIT, Jan. 10.

THE Board of Education, Monroe, Mich., plans the installation of manual training equipment in a proposed two-story high school, for which plans will be drawn by H. H. Turner, Michigan Trust Building, Grand Rapids, Mich., architect.

The Ward Refrigerator Co., Detroit, manufacturer of small domestic refrigerators, has acquired property at Niles, Mich., and plans the removal of its business to that place. Additional equipment will be provided for increased output.

The Murray Corporation of America, Inc., Detroit, has been organized with a working capital of $8,000,000 to take over and operate the Murray Body Corporation, Detroit, manufacturer of automobile bodies, in receivership for about a year. The new company purposes to operate all plants at Detroit, Ecorse and Bay City, Mich., and Indianapolis, developing capacity for automobile frame and metal stampings. William Robert Wilson, president Guardian Trust Co., Detroit, has been made chairman of the board.

The Board of Education, 735 Bagley Street, Grand Rapids, Mich., plans the installation of manual training equipment in its proposed new high school at East Grand Rapids to cost $425,000, for which bids are being asked on a general contract until Jan. 24. Robinson & Campau, Michigan Trust Building, Grand Rapids, are architects.

The Allied Chemical & Dye Corporation, 61 Broadway, New York, has completed negotiations for the purchase of the Steere Engineering Co., Detroit, with plant at Owosso, Mich., for the manufacture of gas plant machinery, tanks, etc., giving employment to about 400 men. The purchasing company also operates the Semet-Solvay Co., Solvay, N. Y., and is forming a new subsidiary under the name of the Semet-Solvay Engineering Corporation, to consolidate the Steere organization and the engineering and construction divisions of the Semet-Solvay Co. Expansion is planned.

The Ward Electric Refrigerator Co., 1221 Beaufait Street, Buchanan, Mich., has awarded a general contract to William Miller, Buchanan, for an addition to cost close to $50,000 with equipment.

The Michigan Gas & Electric Co., Ishpeming, Mich., has arranged for a bond issue of $661,000 and stock issue, $381,000, a portion of the proceeds to be used for extensions and improvements, and the acquisition of new properties, including the Niles Gas & Light Co., Niles, Mich.

The Board of Education, L'Anse, Mich., plans the installation of manual training equipment in its proposed three-story and basement high school to cost about $300,000, for which bids will be asked at once on a general contract. F. E. and G. E. Parmalee, First National Bank Building, Iron Mountain, Mich., are architects.

The Buell Die & Machine Co., Detroit, has awarded a general contract to the A. R. Yops Co., Detroit, for a one-story addition to cost about $23,000.

The Woodmere Scrap Iron & Metal Co., 9101-9105 Fort Street West, Detroit, has purchased the material and equipment of four main power houses and 12 substations from the Detroit United Railway Co. Included in the purchase are electrical and steam equipment. The company has estimated the amount of scrap to be taken from the properties as approximately 10,000 tons of iron and steel and 700 tons of copper and brass, all of which will be removed within the next 18 months.

The Wilson Foundry & Machine Co., Pontiac, Mich., is advancing production at its plant and in the past fortnight close to 800 men have been added to the pay roll, making a working force of approximately 2600. It is planned to continue the expansion until close to 4000 men are employed, scheduled by the end of January. The increase is due to heavy orders from the Willys-Overland Co., Toledo, with which the Wilson company is affiliated.

The Detroit district sales offices of the Columbia Steel Co., Pittsburgh, have been moved to 2238 Book Building.

The Wetmore Reamer Co., Milwaukee, maker of adjustable reamers, is now represented in the State of Michigan by Rummins & Murray, Inc., 4829 Woodward Avenue, Detroit.

## Cincinnati

CINCINNATI, Jan. 10.

WHILE machine tool buyers are slow in closing for equipment, sales the past week having been below normal, local builders report that unfilled orders are approximately 25 to 30 per cent greater than in January, 1926. Inquiries are numerous, and if only a fair percentage of them are converted into actual business in the next 30 days, the volume of bookings will be regarded as satisfactory. Although there is a moderate amount of inquiry from automobile makers, orders from that source are not expected to reach sizable proportions during the coming month. Most of the local builders believe that they must look to the general industrial field for the bulk of their business in the immediate future.

Two automotive companies have bought a total of 42 buffers and polishers from a Cincinnati manufacturer, and another local builder has received an order for 11 special lathes from an automobile manufacturer. Otherwise, bookings have been confined principally to single machines from widely diversified sources. The Missouri Pacific has purchased a 5-ft. semi-universal radial drill, and a Scranton, Pa., company bought a 60-in. x 48-in. x 18-ft. planer. The city of St. Petersburg, Fla., has contracted for a 42-in. carwheel borer.

The Norfolk & Western Railway Co., Roanoke, Va., has awarded a general contract to McCabe & Proctor, 437 Fifth Street, Portsmouth, Ohio, for extensions and improvements in its locomotive shops at Portsmouth, to cost about $30,000.

The G. W. Simmons Co., 605 Linden Avenue, Memphis, Tenn., is in the market for wood-working equipment, including diagonal door planer, bottom rounder, etc.

The Board of Education, Memphis, Tenn., is considering the installation of manual training equipment in its proposed new high school at South Bellevue and Carr Avenues, estimated to cost $275,000, for which plans are being drawn by Jones & Furbringer, Porter Building, architects.

Garber & Woodward, 4 West Seventh Street, Cincinnati, architects, are preparing plans for a seven-story and basement automobile service, repair and garage building, estimated to cost $300,000 with equipment.

The Delco Light Co., Moraine City, Dayton, Ohio, a division of the General Motors Corporation, Detroit, has awarded a general contract to the Danis Hunt Co., Schwind Building, for a one-story addition to its Frigidaire plant to cost $36,000.

The Board of Education, Cadiz, Ohio, is planning the installation of manual training equipment in its proposed new high school, to cost $250,000, for which plans are being completed by C. W. Bates, 77 Twelfth Street, Wheeling, W. Va., architect.

Z. W. Wheland, Mississippi Avenue, North Chattanooga, Tenn., and associates are completing plans for the organization of a company to construct and operate an ice-manufacturing and cold storage plant on Central Avenue, where site has been secured. It will be two and four stories, 200 x 570 ft., to cost more than $500,000 with equipment. G. H. Patten, Eleventh and Georgia Streets, Chattanooga, is also interested in the project.

The Hobart Mfg. Co., Troy, Ohio, manufacturer of electric-operated mixing machinery, etc., has awarded a general contract to Charles Shook, Third National Bank Building, Dayton, Ohio, for a three-story and basement addition, 65 x 170 ft., to cost close to $100,000 with equipment. Schenck & Williams, Third National Bank Building, Dayton, are architects.

The Inland Mfg. Co., Coleman Avenue, Dayton, Ohio, manufacturer of automobile steering equipment, etc., has taken out a permit for its new plant at 200-16 Abbey Avenue, to cost about $115,000 with equipment.

The City Council, Hamilton, Ohio, is said to be planning an early call for bids for its municipal electric light and power plant, estimated to cost $500,000 with equipment, for which plans have been drawn by Froelich & Emery, Second National Bank Building, Toledo, Ohio, architects.

The Hoersting & Holtmann Co., 1133 West Third Street, Dayton, Ohio, manufacturer of furnaces, has been incorporated for $30,000. The company has been in business for 26 years and the incorporation signifies no change in operations.

## Pittsburgh

PITTSBURGH, Jan. 10.

THE new year is opening with fair activity in the machinery and equipment fields. The Westinghouse Electric & Mfg. Co. has begun purchases against its quarterly tool list which, as noted recently, contains more than 80 items. Purchases also are reported by the Baltimore & Ohio and the Norfolk & Western railroads. Dealers generally have considerable business lined up, particularly for the steel companies, and sentiment is optimistic regarding immediate prospects.

Power equipment business has been brisk in the past week. The Weirton Steel Co. has placed ten 500-hp. motors for its new strip sheet mill with the Allis-Chalmers Mfg. Co., three motor-generator sets with switchboards and control with the General Electric Co., and the transformers with the Pittsburgh Transformer Co. The American Sheet & Tin Plate Co. has placed two 1800-hp., one 750-hp. and one 350-hp. motors for its new continuous tin plate mill at Gary Ind., with the Allis-Chalmers Mfg. Co., and three motor-generator sets and five 2000-hp. motors with the Westinghouse Electric & Mfg. Co. The new seamless pipe mill of the Jones & Laughlin Steel Corporation is progressing rapidly; the award of the cranes was preceded by the placing of the contract for the complete seamless unit with the Aetna-Standard Engineering Co.

The Rodgers Sand Co., 1 Wood Street, Pittsburgh, is arranging an expansion program for 1927. A new sand and gravel unloading plant will be constructed at the foot of Ridge Avenue, Northside, with complete equipment; a new storage and distributing plant will be built also at this location, as well as a large service, repair and garage building for company motor trucks. The entire project is reported to cost in excess of $250,000 with equipment. The company is planning to place orders soon for the construction of 10 new steel barges for sand and gravel service.

A controlling interest in the Oil Well Supply Co., 215 Water Street, Pittsburgh, manufacturer of oil and gas well machinery, drilling equipment, etc., has been acquired by James H. Hillman, Jr., Pittsburgh, and associates, for a reported sum of $15,000,000. With the introduction of new capital, plans are said to be under way for expansion. Present officers are expected to continue without change, including Louis Brown, president and H. C. Burns, treasurer.

The Guyan Machine Shops, Logan, W. Va., machinery dealers have inquiries out for a 14 x 36-in. lathe, single pulley drive; a milling cutter, with capacity for handling stock up to 9 in. diameter; a punch and slitting shear to handle ¼-in. plate, and a number of industrial motors, from 2 to 20-hp.

The Union Radiator Co., Johnstown, Pa., has plans for a one-story addition to cost about $45,000, for which it is purposed to ask bids early in the spring. Gray & Clofiin, Swank Building, are architects.

The receiver for the Becker Steel Co., South Charleston, W. Va., has been ordered to offer the plant of the company at a public sale. It has been idle for several years.

The Pressed Metal Radiator Co., Oliver Building, Pittsburgh, has changed its name to the Shaw-Perkins Mfg. Co.

## Buffalo

BUFFALO, Jan. 10.

BIDS have been asked by the Carborundum Co., Buffalo Avenue, Niagara Falls, N. Y., manufacturer of abrasive materials, for a four-story addition, 30 x 100 ft., to cost in excess of $75,000.

The new pole plant to be erected by the Rochester Gas & Electric Corporation, East Avenue, Rochester, N. Y., 60 x 120 ft., will be equipped for the production of cast concrete poles. A traveling crane will be installed. The plant will cost approximately $45,000.

The Ritter Dental Mfg. Co., 404 West Avenue, Rochester, has awarded a general contract to the Stallman's Sons Co., East Rochester, for its one-story foundry, 60 x 140 ft., to cost approximately $40,000 with equipment. Foote & Carpenter, Temple Building, are architects.

The Robert Gair Co., 350 Madison Avenue, New York, manufacturer of corrugated paper boxes and containers, has acquired the plant of the Paper Board Corporation, Tonawanda, N. Y., and will continue operation as a branch mill for paper board supply for its finished container divisions. The Tonawanda mill has a capacity of close to 300,000 lb. of material per day, and extensions are said to be under consideration. As recently announced, the company is plan-

ning the early removal of its main plant at 49 Washington Street, Brooklyn, to Piermont, N. Y., where larger output will be arranged.

Fire, Jan. 2, destroyed the plant of the Warren Axe & Tool Co., Dunkirk, N. Y., with loss estimated at close to $100,000 with equipment. Plans for rebuilding are under consideration. Headquarters are at Warren, Pa.

The United States Radiator Corporation, Wright Street, Dunkirk, N. Y., manufacturer of hot-water radiators, etc., has plans for a one-story addition, to cost close to $45,000 with equipment. Headquarters are at 133 Grand River Avenue, East, Detroit, and engineering offices at this address are in charge of the expansion work.

The Board of Education, 138 Forest Avenue, Jamestown, N. Y., is considering the installation of manual training equipment in its proposed new junior high school to cost $400,000, for which bids will be asked on a general contract in the spring. Guilbert & Betelle, Chamber of Commerce Building, Newark, N. J., are architects; Beck & Tinkham, Bailey Building, Jamestown, are associate architects.

Fire, Dec. 30, destroyed a portion of the mill of the International Paper Co. at Glen Park, a suburb of Watertown, N. Y., with loss estimated at $300,000 with equipment. Plans for rebuilding are said to be under consideration. Headquarters are at 100 East Forty-second Street, New York.

Engesser & Schuster, Watertown, N. Y., manufacturers of pipe thawing generator sets, have been incorporated with a capital stock of $50,000 under the name of the Engesser Electric Mfg. Co. and will continue the manufacture and repair of electrical apparatus.

The Rane Tool Co., 59 Hopkins Avenue, Jamestown, N. Y., has been incorporated under the New York laws and will hereafter be known as the Rane Tool Co., Inc. The company does a special tool contract business and is equipped to manufacture small parts and special articles for the trade.

## Gulf States

BIRMINGHAM, Jan. 11.

PLANS have been completed by the Florida Power & Light Co., Civic Building, Miami, Fla., for a new one-story ice-manufacturing plant at Melbourne, Fla., to cost about $100,000 with equipment. The company will also construct an addition to its ice-manufacturing plant at Fort Myers, Fla., to cost approximately $150,000 with equipment.

The City Council, Lewisville, Tex., plans the installation of pumping equipment in connection with extensions and improvements in the municipal waterworks, to cost about $60,000. Bonds have been voted.

The Eastman-Gardiner Hardwood Co., Laurel, Miss., will rebuild the portion of its mill recently destroyed by fire, with loss estimated at $100,000 with equipment.

The Board of Trustees, Cedar Keys, Fla., G. R. Andrews, chairman, is asking bids until Jan. 25 for equipment for the municipal waterworks and sewage system, including pumping plant, elevated steel water tank and tower and auxiliaries. The Main Engineering Co., Inc., 112 Baker Street, Daytona Beach, Fla., is engineer.

The Munger Cotton Oil Co., Mexia, Tex., has acquired the oil plant of the Mutual Refining Co., Sherman, Tex., and will take possession soon. Extensions and improvements are under consideration. R. A. Parker is vice-president of the Munger company.

The Board of Education, Abilene, Tex., is planning the installation of manual training equipment in its proposed new high school, for which a bond issue of $200,000 has been approved. O. K. Hobbs is city engineer.

The Florida West Coast Ice Co., St. Petersburg, Fla., affiliated with the Pinellas County Power Co., same location, is disposing of a bond issue of $1,900,000, a portion of the proceeds to be used for extensions and improvements, including the acquisition of the Pinellas Ice & Cold Storage Co., and the Citizens' Ice & Cold Storage Co., which will be consolidated and extended. H. D. Polhemus is president.

The Lufkin Foundry & Machine Co., Lufkin, Tex., has filed plans for a one-story addition to cost $20,000 with equipment.

The San Antonio Machine & Supply Co., 102 South Chaparral Street, Corpus Christi, Tex., with headquarters at San Antonio, Tex., has plans for the immediate erection of a new factory branch, storage and distributing plant, 100 x 140 ft., at Corpus Christi, estimated to cost more than $225,000 with equipment. Herbert S. Green, Alamo National Bank Building, San Antonio, is architect.

The Houston Ready-Cut House Co., 4445 Walker Avenue, Houston, Tex., manufacturer of portable houses, has plans for the first unit of a new factory, 175 x 210 ft., one story, to cost about $35,000. J. H. Suttles is president.

The Gonzales Cement Works, Inc., Gonzales, Tex., is contemplating the erection of a new plant at San Antonio, for the manufacture of concrete sewer pipe, estimated to cost $75,000 with equipment. The majority of machinery will be electrically operated. C. A. Neuman is president.

The Morgan-Wade Utilities Co., A. O. U. W. Building, Little Rock, Ark., has acquired the plant of the Crystal Ice Co., Brownwood, Tex., and contemplates plans for extensions and improvements, with installation of equipment to increase the output by 30 tons per day.

The Jasper Veneer & Mfg. Co., Jasper, Tex., has plans for a one-story factory for the manufacture of veneer specialties to cost more than $35,000 with machinery. L. H. Metz is general manager.

The Humble Oil Co., Humble Building, Houston, Tex., is said to be planning the construction of a new pipe line from the Panhandle oil fields to Childress, Tex., with storage and distributing plant, pumping plant, mechanical shops, loading racks, etc., at the last noted place. The project is reported to cost in excess of $2,000,000. Later the company contemplates the construction of a pipe line from Childress to the vicinity of Houston.

## St. Louis

ST. LOUIS, Jan. 10.

THE local machine tool business in 1926 is reported to have been the best since 1920, despite the fact that the railroads and other large interests issued no big lists during the year. Business has been steady and the total volume was brought up through constant orders of one and two tools at a time.

The St. Louis Board of Public Service has let contract to the DeLaval Steam Turbine Co., Trenton, N. J., for furnishing and erecting three low-service and two high-service turbine-driven centrifugal pumping units for the municipal waterworks.

Contract has been let by the American Insulation Co., Roberts Avenue and Stokley Street, Philadelphia, to the Austin Co. for its proposed new plant on Riverview Drive, St. Louis, to cost in excess of $80,000 with equipment.

The W. A. Ross Construction Co., Railway Exchange Building, Kansas City, Mo., has leased about 3 acres as a site for a new concrete mixing plant, with automatic mixing machines, conveying equipment, etc., to cost in excess of $175,000 with machinery.

The City Council, Ponca City, Okla., is planning for extensions and improvements in the municipal electric light and power house, including the installation of additional equipment, estimated to cost $300,000. Bonds are being arranged in this amount. C. E. Norton is city clerk.

Fire, Dec. 30, destroyed the gasoline refinery of the Gypsey Oil Co., near Three Sands, Okla., with loss reported in excess of $500,000 including equipment. Plans for rebuilding are under advisement.

D. R. Harrison, Arcade Building, St. Louis, architect, will soon begin the construction of a three-story automobile service, repair and garage building, 60 x 225 ft., to cost about $125,000 with equipment.

The Railway Ice Co., Monett, Mo., is said to be planning extensions and improvements in its ice-manufacturing plant to cost $150,000 with equipment.

The American Steel Co., 2844 Southwest Boulevard, Kansas City, Mo., has begun the erection of its new one-story plant at 1211 West Twenty-seventh Street, 60 x 120 ft., for which a general contract recently was let to the Patti Construction Co., 626 Lee Building, to cost about $30,000 with equipment.

The Producers' Cotton Oil Co., Hobart, Okla., is said to have plans under way for a new cottonseed oil mill with capacity of about 40 tons per day. George E. Neal is head.

The Springfield Ice & Refrigeration Co., 227 West Mill Street, Springfield, Mo., will soon break ground for a two-story and basement ice-manufacturing and refrigerating plant, 86 x 110 ft., to cost about $125,000 with equipment. Ophuls & Hill, Inc., 110 West Forty-second Street, New York, is architect.

The G. D. Morrow & Son Construction Co., Kennedy Building, Tulsa, Okla., has been awarded contract for a four-story automobile service, repair and garage building, 110 x 135 ft., to cost about $130,000 with equipment.

The City Council, Macon, Mo., has preliminary plans for extensions and improvements in the municipal electric lighting plant and waterworks. The Burns & McDonnell Engineering Co., Interstate Building, Kansas City, Mo., is engineer.

The Producers' Ice & Mfg. Co., 410 West Chase Street, Springfield, Mo., has tentative plans for a new ice and cold

storage plant to cost $60,000 with equipment. C. F. Cheek is president.

The Bussman Mfg. Co., 3819 North Twenty-third Street, St. Louis, manufacturer of electrical equipment, has acquired a five-story building which it will remodel for a new plant. It is purposed to double the present capacity.

The City Council, Adams, Neb., plans the installation of pumping equipment in connection with a proposed municipal waterworks, with elevated steel tank and tower, to cost about $30,000. The Henningson Engineering Co., National Building, Omaha, Neb., is engineer.

It has been stated recently that the municipal light and power plant at Batesville, Ark., had been purchased by the Arkansas Light & Power Co., Pine Bluff. This is an error. No deal has been made with any one as yet and the property is still for sale.

The Inland Steel Co., Chicago, has removed its St. Louis office from 504 to 508 Bank of Commerce Building, which provides larger quarters. F. R. Meyer, Jr., is district sales manager.

## Cleveland

CLEVELAND, Jan. 10.

MACHINE tool business has shown more life since the holidays, and the outlook in this territory is better than for some time. A fair volume of single tool orders was placed during the week, considerable of this being business that was in prospect late last year. New inquiries have also improved. Buying is well distributed among various metal-working industries. The only round lot sale reported during the week was 14 turret lathes placed by an Eastern manufacturer with a Cleveland lathe builder. The automotive industry in Michigan continues quiet, with the result that the volume of machinery business in Detroit is light.

The Cleveland Gasket & Mfg. Co., 1610 West 116th Street, Cleveland, will take bids shortly for a two-story addition, 60 x 120 ft. H. A. Lindsley is the manager. G. F. Hammond is the architect.

The Falcon-Knight Co., Majestic Building, Detroit, is preparing plans for the erection of a plant in Elyria, Ohio. It will be one-story, of saw-tooth type, providing 600,000 sq. ft. of floor space.

The Whitacre Engineering Co., Union Building, Cleveland, of which Arthur Hagener is manager, has been appointed Cleveland district sales agent of the Kalman Steel Co., Chicago. K. E. Wagner, who has been the Cleveland district sales representative of the Kalman company, has become affiliated with the Whitacre company and will have charge of sales of building tile for that company in Chicago, where the Whitacre company is opening an office.

The Perfection Stove Co., Cleveland, calls attention to a statement appearing in THE IRON AGE of Dec. 9, 1926, in which it was said that this company is a subsidiary of the Standard Oil Co. The Perfection Stove Co. explains that the Standard Oil Co. owns no stock in the Perfection Stove Co., but acts as its distributer in New York and the New England States and in foreign countries. Otherwise there is no connection between the two companies, it is stated.

The Luehrs Co., 118 St. Clair Avenue, Cleveland, has placed contract with J. S. Shafer, Smythe Building, for a two-story, 120 x 150 ft. factory, at Canton, Ohio.

The Gogan Machine & Foundry Co., Inc., 1630 Collamer Road, Cleveland, will erect a new plant at 1440 East Fifty-third Street, with 4500 sq. ft. of floor space. The company manufactures machines for forming and heat treating automobile and railroad springs and other special equipment.

The Portage Tool Co., 414 South Broadway, Akron, Ohio, will build a one-story plant, 50 x 150 ft. C. H. Hall is secretary and treasurer.

The city of Fostoria, Ohio, has plans for a $115,000 water purification plant.

The city of Fremont, Ohio, has placed a general contract for a filtration and water softening plant, for which filtering equipment, storage bins and a steam heating plant will be required. W. G. Clark, Spitzer Building, Toledo, Ohio, is the engineer.

The Akron Equipment Co., Exchange and Annandale Streets, Akron, Ohio, has placed a general contract for a two-story plant, 63 x 65 ft. M. R. Coin is manager.

The Dolomite Products Co., 1110 Euclid Avenue, Cleveland, has changed its name to Dolomite, Inc. There will be no change in ownership, management or products.

The Commercial Shearing & Stamping Co., Youngstown, has started work on a $150,000 addition, which will increase the capacity of its plant on Logan Avenue 50 per cent. The present main building, 300 ft. in length, is being enlarged by an addition 150 ft. long, for which foundations have been completed. The Commercial company reports expanding business necessitates the enlargement. George F. Alderdice, former sales manager of the Brier Hill Steel Co., is general manager of the Commercial company.

## Milwaukee

MILWAUKEE, Jan. 10.

IMPROVEMENT in inquiry is the most important development in the machine tool market the first week of the new year. Sales, although mostly for replacement, have shown some betterment, but volume is as yet lacking. There is still a dearth of industrial construction of interest to the machine tool trade, but plans are developing which are expected to lead to some good business.

The Valerius Refrigeration Corporation, 458 Jefferson Street, Milwaukee, has acquired an existing plant at Jefferson, Wis., and will install equipment for the manufacture of electrically-operated automatic soda fountains and institutional cooling equipment. Production is expected to begin by Feb. 1. T. L. Valerius is president and general manager.

The Generating Gear Co., Milwaukee, has been incorporated with a capital stock of $25,000 to succeed to the partnership business conducted under the same name for several years, with plant and offices at 1244 Twenty-fourth Avenue. Enlargement of the facilities is contemplated which will require some additional tooling. Robert C. Fink is president and general manager.

The Modern Auto Parts Co., 2303 North Eighth Street, Sheboygan, Wis., has purchased a site in the downtown district and will erect a new machine shop and service building costing about $30,000 early in the coming spring. It manufactures automotive parts and materials and is distributer and service station for accessories and equipment manufacturers. Rance Loop is general manager.

The Racine Sheet Metal Works, Inc., capital stock $50,000, has been incorporated at Racine as successor to a firm of similar title which has been operating for several years. The principals are Oscar Paulson, Oscar N. Nelson and Harvey Paulson. Details are expected shortly concerning an enlargement program.

The Bradley Wash Fountain Co., 2203 Sycamore Street, Milwaukee, manufacturer of sanitary devices, plumbers' supplies, etc., has let the general contract to the Federal Engineering Co., 444 Milwaukee Street, for the construction of an addition, 60 x 90 ft., part two stories and basement. With equipment the improvement will cost about $35,000. Walter H. Silpath is secretary and manager.

## Indiana

INDIANAPOLIS, Jan. 10.

CARL A. TINDALL, Newcastle, Ind., is at the head of a project to organize a company with capital of $75,000 to manufacture furniture. It is proposed to construct a plant in the vicinity of Bogalusa, La., to cost close to $50,000 with equipment. H. B. White, Bogalusa, is interested in the project.

The Woodward Pattern Works, South Bend, Ind., will build a new one-story plant for the manufacture of metal and wood patterns, 40 x 100 ft., to cost about $25,000. M. E. Smith, 323 South Main Street, is architect. J. H. Woodward heads the company.

The Thornburg-Lewis Co., 1300 East Washington Street, Indianapolis, has plans for a two-story machine shop and automobile service works, 90 x 190 ft., to cost approximately $60,000 with equipment. Doeppers & Lennox, 226 East Michigan Street, are architects.

The Board of Education, 150 North Meridian Street, Indianapolis, will install a group of manual training shops, laboratories, etc., in the two-story and basement Shortridge high school to cost $1,000,000, for which bids will be received on a general contract until Jan. 21. J. Edwin Kopf and Deery, Indiana Pythian Building, are architects. U. M. Frazer is business director.

C. E. Miller, 206 South Michigan Avenue, Mishawaka, Ind., architect, has plans for a one-story machine shop and boiler plant to be owned by the Greater Realty Co., Mishawaka, and leased to a company whose name is temporarily withheld. It will cost about $25,000.

The Chicago, Indianapolis & Louisville Railway Co., 608 South Dearborn Street, Chicago, has plans for new car and

locomotive shops at Lafayette, Ind., to cost in excess of $275,000 with equipment. A. S. Kent is chief engineer in charge.

The real estate, machinery and equipment of the Marion Forged Products Co., Marion, Ind., will be offered at auction on Jan. 11 and 12. The property includes 18 manufacturing buildings covering six acres.

The Bendix Brake Co., South Bend, Ind., has started the construction of an addition, 100 x 160 ft.

The Montpelier Mfg. Co., Montpelier, Ind., has been reorganized under the name of the Montpelier Mfg. Corporation and will operate a foundry.

The C. & G. Foundry & Pattern Works, 1026 Kentucky Avenue, Indianapolis, manufacturer of brass, bronze and aluminum castings, has purchased the plant and real estate of the Enterprise Foundry Co., Twenty-Fifth and Yandes Streets. The latter will be operated as a gray iron foundry. Charles J. Gisler is president and general manager.

The Muncie Galvanizing & Mfg. Co., will erect a plant on the site formerly occupied by the Midland Steel Works, Muncie, Ind. The incorporators are C. A. Frick and Carl A. Oesterle, both of Muncie, and C. J. Stetler, Dayton.

The Titan Electrical Co., Butler, Ind., has been incorporated with a capitalization of $18,000 to manufacture electric motors and steel specialties. The company is a reorganization of the Titan Engineering Co. now in the hands of a receiver.

The Marion Machine, Foundry & Supply Co., Marion, Ind., has purchased at a receiver's sale, the plant in Brazil, Ind., formerly operated by the R. D. Eagleshield Co. A new company, the Indiana Machine & Foundry Co., has been incorporated to operate the property for the manufacture of castings. Approximately $25,000 will be spent in installing new equipment.

**Erratum**

The Corcoran Mfg. Co., 217 West Tenth Street, Indianapolis, was mentioned in the Dec. 23 issue of THE IRON AGE as having plans for the construction of a branch factory at Washington, Ind., to make toys. L. A. Corcoran, president, requests that this statement be corrected, the company, he advises, having no such plans.

## Chicago

CHICAGO, Jan. 10.

BUYERS of machine tools are fairly active on old inquiry, but are showing little interest in making known new requirements. The St. Paul Railroad has placed a 24-in. shaper and a 2-in. pipe-cutting machine. A local valve manufacturer has bought an 11-ton steam hammer. A maker of shafting will buy a multiple-cutting cold saw and several machines for straightening shafts. A builder of heavy machinery at Moline, Ill., has placed a 16-in. x 8-ft. lathe. Other orders include a 16-in. x 8-ft. lathe for a wood-working plant at Grand Rapids, Mich., and a 16-in. x 8-ft. lathe for a valve manufacturer in the Chicago district.

The Universal Portland Cement Co., Chicago, is asking for prices on a boring machine with a 4-in. bar and two 24-in. lathes. It is expected that the Nash Motors Co., Racine, Wis., and the Bendix Brake Corporation, South Bend, Ind., will soon be in the market for additional machine tools. Several items remaining on the Pullman Co.'s list for Atlanta, Ga., are still pending.

The Royal Metal Co., 2318 South Western Avenue, Chicago, manufacturer of metal furniture and houseware, has purchased property at Michigan City, Ind., where it will erect a factory to contain 50,000 sq. ft. of floor space.

The Brown Sheet Iron & Steel Co., 964-1000 Berry Avenue, St. Paul, Minn., has been organized to manufacture a complete line of tanks, barrels and other equipment for the oil trade.

The Robbins Mfg. Co., 1815 North Central Park Avenue, Chicago, manufacturer of screens, will build a factory addition to cost $18,000. Pond & Pond, 6 North Michigan Avenue, are the architects.

Armour & Co., Union Stock Yards, Chicago, will build a power house to cost $150,000.

The Chicago Pump Co., 2336 Wolfram Street, Chicago, will erect a new plant at Benton Harbor, Mich., at a cost of $120,000.

The plant of the Novelty Iron Works, Sterling, Ill., was completely destroyed by fire Dec. 30, with a loss between $75,000 and $100,000.

The Peoria Auto Body Repair Co., Fifth and Franklin Streets, Peoria, Ill., has awarded a general contract to Tapping & Schrum Co., 309 South Jefferson Street, for a new two-story and basement plant, 60 x 150 ft., to cost about $65,000 with equipment.

The International Harvester Co., 608 South Michigan Avenue, Chicago, is reported to be planning a new one-story factory branch at Billings, Mont., with portion given over to assembling, to cost in excess of $100,000 with equipment.

The Central Illinois Public Service Co., Springfield, Ill., has arranged for a preferred stock issue of $534,000, a portion of the proceeds to be used for extensions and improvements. Marshall E. Sampsell is president.

The Otter Tail Power Co., Fergus Falls, Minn., has plans under way for extensions and betterments in its power plant at Bottineau, N. D., recently acquired through purchase of the Bottineau Electric Co.

The Harper Refining Co., 15 North River Street, Aurora, Ill., has work under way on a new oil storage and distributing plant at Elgin, Ill., to cost about $70,000 with equipment.

The City Council, Jewell, Iowa, plans the installation of pumping equipment in connection with proposed extensions and improvements in the municipal waterworks. The Henningson Engineering Co., National Building, Omaha, Neb., is engineer.

The Midland Safe & Lock Co., 617 Washington Avenue, North, Minneapolis, Minn., is reported to be planning the construction of a new plant to cost about $100,000 with equipment. It is expected to have plans ready for bids during the summer. J. W. Kendrick is president.

The Board of Education, Des Moines, Iowa, plans the installation of manual training equipment in its proposed two-story and basement John Callanan junior high school, to cost $350,000, for which plans have been filed. Proudfoot, Rawson & Souers, Hubbell Building, are architects.

The Common Council, Jefferson, Iowa, is considering plans for a municipal electric light and power house and will secure estimates of cost soon.

The City Council, Devils Lake, N. D., plans the installation of pumping machinery in connection with proposed extensions and improvements in the municipal waterworks. A fund of $55,000 is being arranged.

The Gardner Governor Co., Quincy, Ill., has awarded a general contract without competition to Buerkin & Buerkin, Second Street and Broadway, for a one-story addition to its machine shop, 55 x 130 ft., to cost about $40,000 with equipment. Behrensmeyer & Hafner, Quincy, are architects.

## Pacific Coast

SAN FRANCISCO, Jan. 5.

THE Crown-Willamette Paper Co., 248 Battery Street, San Francisco, is considering the construction of a new sulphite pulp mill at Aberdeen, Wash., to cost in excess of $250,000 with machinery.

The Troy Motor Sales Co., Los Angeles, has plans under way for a four-story and basement service, repair and garage building, 150 x 204 ft., to cost close to $175,000 with equipment. Morgan, Walls & Clements, Van Nuys Building, are architects.

The Arizona Light & Power Co., Phoenix, Ariz., is disposing of a bond issue of $1,300,000, a portion of the proceeds to be used for extensions and improvements. H. L. Aller is president.

The Union Ice Co., 354 Pine Street, San Francisco, is completing plans for the construction of a one-story ice-manufacturing plant at Colusa, Cal., to cost close to $50,000 with equipment.

The California-Oregon Power Co., 454 California Street, San Francisco, has authorized the immediate construction of a new hydroelectric generating plant on the Rogue River in southern Oregon. A transmission system will be built. The entire project will cost in excess of $3,000,000 with power dam.

The Citizens' Land & Water Co., Bloomington, Cal., has approved a bond issue of $500,000, a portion of the fund to be used for extensions and improvements in the system, including pumping machinery, power equipment, etc.

The Coast Counties Gas & Electric Co., Santa Cruz, Cal., is planning the construction of a compressor plant and machine repair shop at Pinole, Cal., to cost about $25,000.

The San Luis Ice & Cold Storage Co., San Luis Obispo, Cal., will erect a new one-story ice and cold storage plant, 60 x 120 ft., to cost approximately $60,000 with equipment.

Hamm, Grant & Bruner, Ferguson Building, Los Angeles, are engineers.

The Shaw-Bertram Lumber Co., Klamath Falls, Ore., has authorized plans for an addition to its mill to cost about $100,000 with equipment. J. R. Shaw is president.

The General Petroleum Co., Los Angeles, is planning to rebuild the portion of its gasoline absorption plant at Ventura, Cal., destroyed by fire Dec. 27, with loss reported at $75,000 with equipment.

The Board of Education, Los Angeles, has plans for a one-story vocational shop, 65 x 165 ft., at the Luther Burbank junior high school to cost about $30,000. Noerenberg & Johnson, Los Angeles Railway Building, are architects.

The Bureau of Power & Light, 207 South Broadway, Los Angeles, has secured a preliminary fund of $500,000 to proceed with the construction of the proposed municipal steam-operated electric power plant in the harbor district. The entire station will cost in excess of $2,000,000 with transmission lines.

Badt-Falk & Co., 1423 South Alameda Street, Los Angeles, dealers in reinforcing steel bars and mesh and removable steel forms for concrete construction, have enlarged their plant to extend the entire block from Newton to Fourteenth Streets.

The Seattle offices of the Wheeling Steel Corporation, Wheeling, W. Va., have been moved from 1816 L. C. Smith Building to 803 Skinner Building.

The Mechanical Pattern Works, Inc., has changed its name to the Mechanical Pattern & Foundry Co., Inc., and is now located at 4545 Pacific Boulevard, Vernon, Cal.

The Lift-A-Kar Corporation, 844½ West Tenth Street, Los Angeles, has been organized under Delaware laws with a capital of $100,000 to manufacture a new automobile lift. The company operates its own plant and is in the market for cast iron, cast steel, steel, strap iron, angle iron, boiler plate and steel tubing.

The Brown-Bevis Co., 470 East Third Street, Los Angeles, distributer of machinery, has been sold to Dan R. Brown, president Los Angeles Machinery Dealers' Association, and associates. Daly G. Bevis, vice-president, has retired from the business and will travel for several months. The company name will be continued and the new officers are: Dan R. Brown, president; Charles W. Miller, vice-president; George R. Bury, treasurer; Walter M. Parson, assistant to president and sales manager; Rex Hardy, secretary.

## Canada

TORONTO, Jan. 10.

FOLLOWING the holidays, interest in the Canadian machine tool market has been resumed, and it is predicted that business the next three months will exceed that of any corresponding period last year. Inquiries are being received in fairly large numbers, and while many call for single tools, some fair sized lists are being prepared.

While the past year was one of the best in the mining history of this Province, indications are that the current year will show general improvement. There is considerable activity in northern Ontario with regard to new milling plants. Many are under construction and several companies have made known their intention of building mills. Foundries, steel plants and industrial concerns in general are preparing for a big year, and as a consequence demand for replacement and on new works account is expected to reach a high level. According to builders and dealers a good volume of sales has been closed in the last few days.

The Canadian Canoe Co., Rink Street, Peterborough, Ont., will make repairs to a factory and install new machinery at a cost of $20,000.

The Canadian Pacific Railway Co., Toronto, is having plans prepared for the erection of round house, car facilities building and other structures at Toronto to cost $3,000,000. Construction will start in the spring.

It is reported that the Shevlin-Clark Co., Rainey River, Ont., which recently secured extensive timber lands from the Government will build lumber mills, etc., at Blind River, Ont., to cost approximately $6,000,000. The owners will purchase material and equipment, but will let subtrades.

The Canadian Wirebound Boxes, Ltd., operating a factory at 1000 Gerrard Street, East Toronto, contemplates building a factory and warehouse at West Toronto to have a floor space of 120,000 sq. ft. Plans will be prepared by company's staff.

The Richards Wilcox Canadian Co., Ltd., Chelsea Green, London, Ont., manufacturer of builders' hardware, have awarded a general contract to Hyatt Brothers, 290 Egerton Avenue, local, for $40,000 plant addition.

Considerable new machinery and tools are being installed in the Pere Marquette shops at St. Thomas, Ont., including a huge wheel press and a 32-in. shaper.

The Water, Light & Power Commission, Orillia, Ont., has closed contract for switching equipment for a substation, and is now calling for bids for special standard and auto-transformers for distribution system in connection with the change of the Orillia system from 2-phase 2,200 to 3-phase 4,000.

The New Zealand Government Railways invite tenders for the supply of 55 electric overhead traveling cranes from 2- to 100-tons capacity, 39- to 80-ft. span, three electric traversers; eight electrically operated screw jack car hoists; 120 jib cranes; 120 electric hoist blocks; 20 electric capstans; four electric mobile cranes, and four electric freight elevators. Bids close April 18, 1927, and must be addressed to the chairman of the Railway Board, Wellington, New Zealand. Tenders must be quoted in sterling, delivery f.o.b. the nearest port of shipment to New Zealand, and the time at which delivery can be given. Details can be had from the Department of Trade and Commerce, Ottawa, Canada, file No. 19016.

The Executive Committee, Montreal, is in the market for a screw machine. Address H. A. Terreault, director of Public Works, City Hall.

The Nova Scotia Public Fish & Cold Storage Terminals, Ltd., Halifax, N. S., will build a local plant to cost $1,250,000. M. B. Archibald of Kenny & Archibald is interested.

Lewis Connors & Sons, Ltd., St. John, N. B., will start work June 1 on a factory at Bonny River, N. B., to cost $250,000. The project will include grist mill, packing plant, etc.

The Union Natural Gas Co. of Canada has purchased the plant and equipment of the Windsor Gas Co., Chatham, Ont. It is understood that the new owners plan considerable extensions and improvements and that the purchase agreement calls for the expenditure of $300,000 during the year.

The Massey-Harris Co., Ltd., 915 King Street West, Toronto, is receiving private tenders for the erection of a $15,000 building to its agricultural implement plant.

Frankel Brothers, Eastern Avenue, Toronto, scrap dealers, are building a $50,000 addition to their plant.

### Western Canada

The Hammond Cedar Co., Port Hammond, B. C., is building an addition to its power plant to cost $50,000.

C. D. Howe & Co., architects, Port Arthur, Ont., are preparing plans for a $600,000 addition to the grain elevator at Fort William, Ont., for the Bawlf Terminal Elevator Co., Ltd., 470 Grain Exchange Building, Winnipeg, Man.

C. D. Howe & Co., architects, Port Arthur, Ont., are preparing plans for $300,000 addition to a grain elevator at Fort William, Ont., for Parrish & Heimbecker, 614 Grain Exchange Building, Winnipeg, Man.


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## Foreign

PLANS are maturing for the construction of a hydroelectric power plant on the Dnieper River in Soviet Ukraine by the Russian Soviet Government, and Col. Hugh L. Cooper, head of Hugh L. Cooper & Co., 101 Park Avenue, New York, consulting engineer, has sailed for Moscow with J. P. Ohsol, vice-president of the Amtorg Trading Corporation, 165 Broadway, official purchasing bureau for the Soviet Government in the United States, to complete final details. Col. Cooper will be in charge of the project. A fund of $5,000,000 has been arranged for work up to September, likely to be increased to $10,000,000 before spring. The plant will have an initial capacity of 150,000 hp. and ultimate output of 650,000 hp. A transmission system will be built to furnish power to the southern mining district in the Soviet Union, including iron mines at Krivoi Rog, and manganese properties at Nicopol. A large irrigation system will be constructed throughout the southern district, and a new railroad line from Krivoi Rog to the Dnieper River. The entire project will cost $60,000,000. Large purchases of equipment will be made by the Amtorg company in the United States.

Officials of the Daido Denryoku Kabushiki Kaisha, Tokyo, Japan, have organized a subsidiary, the Hokuriku Soden Kabushiki Kaisha (Hokuriku Electric Power Transmission Co., Ltd.), capitalized at about $20,000,000, to construct and operate a hydroelectric generating plant on the Sho River in Toyama Prefecture, with capacity of 50,000 kw. The development is estimated to cost close to $10,000,000, while the transmission system, extending to Osaka and vicinity, is expected to cost approximately $9,000,000 additional. The entire project is scheduled for completion in 1929. The American Consulate at Nagoya, Japan, H. T. Goodwin, consul, has information regarding the development.

The municipal government at Cienfuegos, Cuba, has approved plans for the construction of two docks and four warehouses at the foot of La Mar and Valesco Streets. Work on the initial dock and two warehouses, estimated to cost $182,000, will soon begin. The installation will include elevating, conveying and other material handling machinery. Information at the office of the Bureau of Foreign and Domestic Commerce, Washington, reserved information Cuba No. 231020; also at the American Consulate, Cienfuegos, Lucien N. Sullivan, consul.

### Calendars Received

Calendars received at the beginning of the new year include many of highly artistic make-up. They are briefly described in the following paragraphs:

*Carnegie Steel Co., Pittsburgh.*—Safety calendar, 9½ x 17 in. Upper part of sheet contains reproductions in color of prize drawings made by children in safety poster contest. The contest, the fourth annual, was held in schools of ten cities in which the Carnegie company has plants, and the 12 drawings reproduced were selected from more than 9000 posters. The company's safety trophy for 1927 is pictured on the first page. The calendar section is 4½ x 8 in. and figures are red and black on white.

*Youngstown Sheet & Tube Co., Youngstown.*—Poster size 18½ x 24½ in.; calendar 11 x 16 in. with figures red and black on white, 1½ in. high. Two months before and after the current month are given in small boxes on each sheet. The upper section has large and unusually attractive illustrations, in color, of ore boats and of various sections of the company's plants.

*Wellman-Seaver-Morgan Co., Cleveland.*—Poster size, 13½ x 30 in. Calendar section 5½ x 10¼ in., red and black on gray; figures ⅝ in. high; three months on each sheet. Upper section contains attractive illustrations of car dumpers and other products of the company.

*Allis-Chalmers Mfg. Co., Milwaukee.*—Poster size 16 x 26 in. Calendar 8 x 10 in., red and black on white, figures 1 in. high; with two small boxes containing calendar of month before and after current month. Steam turbine, rolling mill drive and other installations of equipment built by the company are shown in a large box above the calendar, and a large number of the company's products are pictured on each side and below the calendar section.

*Nordberg Mfg. Co., Milwaukee.*—Poster size 12½ x 31 in. Calendar 8¼ x 11½ in., red and black on white; figures ¾ in. high. Two boxes, 5 x 7½ in., contain calendar for month before and after current month. Photographs of the company's plant, and various Uniflow engine, Diesel engine and other installations of the company's products are reproduced on the upper part of each sheet.

*Union Switch & Signal Co., Swissvale, Pa.*—Poster size 14 x 28 in.; calendar 7½ x 12 in., white on black; figures 1⅛ in. high. Two boxes 5¼ x 8¼ in. contain calendar in black on white for month each side of current month. Drop forging facilities of the company are advertised on each sheet.

## THE LAST WORD

*(Contributed by the Reader Service Department of the Iron Age Publishing Co.)*

A PRIZE of $5,000 is yours if you can punch more holes than anyone else can in the theories advanced in the book, "Profits." Here is a starter on your road to sudden wealth. The book says, *"Consumer buying lags behind because industry does not disburse to consumers enough money to buy the goods produced."*

Let us test the truth of that. With cotton stockings about as popular as measles among the fair sex, would increased dividend distributions swell the sales of the cotton limb casings? Probably not. Oddly, *decreased* distributions, extending sooner or later to wages, might do the trick in this case.

Score one for us. If you don't give people what they want, Croesus's wealth can not make them buy.

Once more. Assume, for example, that the productive capacity of the bread-making industry were nicely adjusted to consumers' appetites, so that no breadmaker was loafing, and every loaf was consumed. Assume, again, that idle capital became attracted by the prosperity of the busy bread industry and built huge bakeries, doubling the aggregate capacity.

Now, if more money were disbursed to consumers, would they buy twice as much bread, so that the output of the entire industry would be consumed?

Our humble opinion is that output and demand will never be evenly balanced for any length of time in any industry. A busy industry naturally attracts idle capital; capacity is increased and the balance is destroyed. It is asking too much to expect demand to keep pace with unwise and unwarranted expansion of productive capacity.

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EVERY plant without a suggestion system is overlooking an important adjunct of successful industrial management. But if you start one, don't expect to duplicate the experience of the B. & O. shops, and receive 14,000 suggestions within three years, 80 per cent acceptable.

Although the Forhans pyorrhea formula of four out of five has held good here, the exact reverse is the usual experience. Even with four out of five worthless, the excellence of the fifth will justify the maintenance of the system.

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*If you would like to have a strong fabrikoid binder to protect last week's useful issue, mail a dollar bill, check or money order to G. R. Stone,* THE IRON AGE, *239 W. 39th St., New York City. If you want your name gold-stamped on the binder, add 25 cents. The binder will last for years. It is worth about $2. We can sell them at a low price as they are made up in quantity and are being disposed of at the manufacturer's cost.*

A. H. D.